the Skeptical Inquirer

The 'Mind Race' Muddle: Outracing the Evidence

Loch Ness Evidence Reassessed

Exploring the Fringes of Science

The Media and the Paranormal

Retest of an Astrologer / Medical Quackery

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the Skeptical Inquirer

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98 Exploring the Fringes of Science: Critical Inquiries, Shifting Trends *by Kendrick Frazier*

106 NEWS AND COMMENT
Touting Psychic Wonders in the Mainstream Media / Medical Quackery / Bible-Science Conference / Gallup Youth Poll / Perpetual Motion Wins in Court / Hynek Moves to Arizona / Pseudoscience Course in Texas

118 NOTES OF A PSI-WATCHER
From SRI to Delphi: The Curious 'Mind Race' *by Martin Gardner*

122 PSYCHIC VIBRATIONS
Teddy Bears, Mermaids, and Chiropractors *by Robert Sheaffer*

ARTICLES

125 Outracing the Evidence: The Muddled 'Mind Race' *by Ray Hyman*
147 Sonar and Photographic Searches for the Loch Ness Monster: A Reassessment *by Rikki Razdan and Alan Kielar*
159 A Final Interview with Milbourne Christopher *by Michael R. Dennett*
167 A Retest of Astrologer John McCall *by Philip A. Ianna and Charles R. Tolbert*

BOOK REVIEWS

171 Lawrence Fawcett and Barry J. Greenwood, *Clear Intent: The Government Coverup of the UFO Experience* (Philip J. Klass)

179 SOME RECENT BOOKS

180 ARTICLES OF NOTE

184 FROM OUR READERS
Letters from Julie Johnson Knox, Warner Clements, Sue Blackmore, Thomas Gray, Jonathan Thornburg, Gary W. Lea, Michael A. Thalbourne, James Randi, Richard Busch, Jerome J. Tobacyk, Jerome E. Smith, Don Strachan, Edwin A. Rogers, George W. Earley, Page Stephens, Don Watts, and I. J. Good

ON THE COVER: Illustration by Steve Chalker ©1984.

Exploring the Fringes of Science: Critical Inquiries, Shifting Trends

Response to the efforts of the SKEPTICAL INQUIRER continues on a strong, positive, rising course, and we want to thank you for your support and encouragement. Suggestions, comments, inquiries, and requests to critique particular claims come in increasing numbers. High-quality articles arrive in satisfying abundance. Our requests of experts to evaluate new claims are more often than not cheerfully and capably fulfilled. We have become *the* place to publish responsible, scientific critiques of paranormal and fringe-science claims and forthright exposures of pseudoscience. We also serve as a forum for thoughtful discussion of all the issues involved.

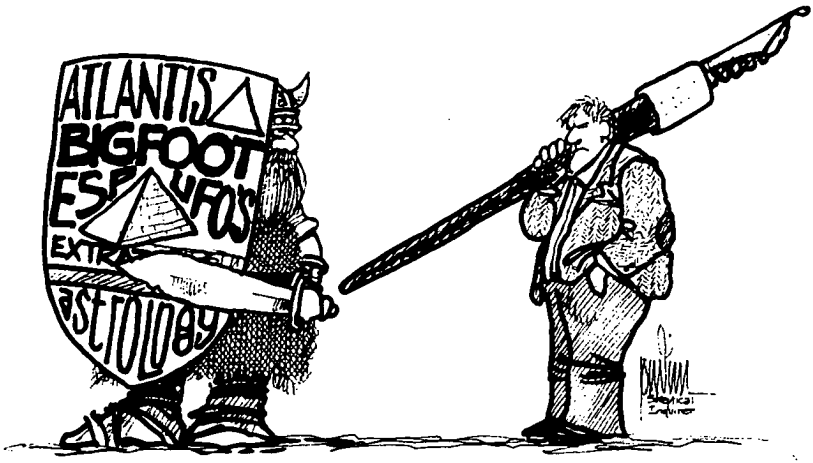
We have expanded the number of pages in each issue and now are providing a full 20 percent more editorial material than we were only a year and a half ago.

Circulation climbs with every issue. New readers are continually coming aboard. Many express pleasure at having discovered us. The majority stay and become a permanent part of the ever-widening community we try to serve. The circulation now stands at around 17,000.

The impact goes far beyond the numbers, of course. Scientists and scholars draw on our articles and research reports for their own studies. Teachers make use of our material in course units on critical thinking. Journalists summarize our published critiques and viewpoints for their mass audiences. And you, our readers, share our material with your friends and associates. When in your local news media or in your personal and professional relationships you encounter particularly blatant abuses of scientific fact or common sense in the realm of the paranormal, you turn to our pages for facts and perspectives to bolster your case for responsibility and reason.

That's what the SKEPTICAL INQUIRER is all about.

We seem to have helped create, or at least to bring together, a community of concerned people dedicated to furthering good science and opposing bogus science—and to exploring the distinctions between the two. They are people with a sense of intellectual adventure and appreciation of the wonders and mysteries of nature who realize that science advances in a kind of two-partner dance. One brings forth all the powers of the creative mind: bold speculation, piercing insight, imagination, intuition, an ability to synthesize and to see order in chaos, a willingness always to push forward into



unexplored intellectual territory. The other brings forth all the capabilities of the disciplined mind: the ability to form testable hypotheses and design and implement controlled experiments, the determination to assess the quality of evidence, the willingness to subject results to peer criticism, and the ability to modify or even abandon (eventually, anyway) hypotheses in the light of new evidence. Both partners in this dance are necessary. As they operate in balance and harmony, science flourishes.

In the domain of the paranormal and the fringes of science, with which we are concerned, things get all out of whack—especially in the public arena. Speculation substitutes for substance. Untested ideas gain the status of solid scientific principles. Assertions crowd out hypotheses. Fictions become facts. Wishful thinking substitutes for rigorous thinking.

We've tried bringing some semblance of sanity, scientific rigor, and common sense to these subjects. No publication has ever been devoted to quite this task before. Our readers seem to appreciate it. I shall quote from just one letter:

> Your periodical has become my favorite of many scientific and cultural magazines. . . . Permit me to add my voice to those who praise the fine work you are doing. . . . You are performing a public service in providing a "Reason Watchdog" function, and I commend you for it. . . . Your work transcends its immediate importance to our small readership, but serves a far greater good in holding down the alarmingly high level of irresponsible nonsense to levels with which a true miracle might just occur—the prevailing of reason and truth.

* * * * *

In the years we have been publishing the SKEPTICAL INQUIRER, I have noticed with fascination the shifts in popularity and trendiness among the fringe-sciences. What I call the geophysics-based fringe-sciences have nose-dived in popularity from their peak in the mid-1970s. The Bermuda Triangle has been forgotten. Von Däniken's "ancient astronauts" are ancient history. Velikovsky's planetary collisions during human memory are now seldom invoked to explain biblical miracles. UFOs still haven't deployed any extraterrestrials onto the White House grounds. One gets the impression that even ardent UFOlogists have become weary of the wait. Astrology is still around, but the Age of Aquarius surely isn't, and cocktail-party "what's your sign" astrological chit-chat is less fashionable now.

But the psychology-based fringe-sciences are having a heyday. Academic parapsychology may be no farther along in demonstrating the existence of paranormal powers than it was a century ago. In fact, as James Alcock argued in our Summer 1984 issue, its claims may be getting wilder and even less credulous. Nevertheless, to most of the public psi seems a foregone reality. "Psychics" absolutely permeate the media. "Psychic" crime-solvers or body-finders emerge whenever there are dramatic missing-persons cases, in communities large and small, far and wide. They play on the emotions of victimized families grasping for any sort of hope and on the tradition of police forces to listen to all possible leads. Any successful "predictions"—usually disclosed only after the fact—are played up by media and police alike, and the unsuccessful ones are never revealed or are forgotten.

The general gullibility of print and television media about such events only reflects the widespread public acceptance of "psychics" being what they claim. The very word *psychic* implies the existence of paranormal powers never scientifically demonstrated, but it seldom seems to ring a cautionary bell to editors or others. To see what a credulous environment we are in, substitute "soothsayer" or "entrail reader" for "psychic" in all the stories you read. One sounds modern and trendy, the other archaic and medieval—yet exactly the same psychological principles are being used in persuading listeners that special powers are in operation. "Clairvoyance" may have an old-fashioned ring, but call it "remote viewing," as the parascientists whose research is critiqued by Ray Hyman in this issue have done, and to some it suddenly sounds scientific.

Because of recent books and reports of varying credibility, the idea that some people in the U.S. government are taking "psychic warfare" seriously is gaining a certain strange respectability in some circles. To the degree these reports are true—and I think their significance has been greatly exaggerated—it only shows the isolation

from peer review and scientific scrutiny possible in Pentagon corridors and think-tanks.

Reports persist of metal-bending parties in affluent suburbs, and this year there has been a flurry of articles about well-attended workshops in California and Arizona cities on, of all things, fire-walking. Here the motivations may range from a desire for new and entertaining diversions—the trendy have to have *something* new to do and talk about now that astrology is *passé*—to a well-meaning search for discipline and control over fear.

On a more serious level, creationism has lept into prominence across the land, a pseudoscience pernicious in its political influence on science education. It is too early to say whether the elegantly argued decision of Judge Overton in Arkansas and the repeal of the Texas Board of Education's anti-evolution rules have taken the wind out of the creationist movement's sails. Creationists have a knack for switching tactics and going underground when it suits their needs.

Medical quackery has reached epidemic proportions, bilking consumers of $10 billion a year in America alone. (See p. 109.)

But there are many hopeful signs. Local groups inspired by the Committee for the Scientific Investigation of Claims of the Paranormal have sprung up all over the United States. They can work more directly with local media and organizations. They can quickly correct misconceptions about local paranormal claims and present the case for scientific method and evaluation. Many of them are doing superb work. The Bay Area Skeptics comes immediately to mind. But groups in the Pacific Northwest, in the large cities of Texas, and in other cities and regions are all making positive contributions. This was something we didn't even anticipate five years ago.

The new science magazines that came onto the scene five years ago have conveyed the achievements and awesome mysteries of real science to a new generation of readers. Two of them, *Discover* and *Science 84*, have made special efforts to debunk pseudoscience.

Ten years ago authors of books critical of the paranormal had great difficulty finding publishers. Since then an impressive number of excellent books written from a responsible, scientific point of view have been published. Prometheus Books in Buffalo—not officially connected with CSICOP but headed by founding chairman Paul Kurtz—has produced a steady stream of books critiquing paranormal claims. This publishing effort deserves great credit. An advantage of Prometheus's marketing policies is that their books are backlisted. They are available years after publication in contrast to the many publishers whose books quickly go out of print if they don't sell well immediately. Other respected publishers have also issued fine books critically examining the paranormal. And unless I'm mistaken, fewer

books of pseudoscience are now being published. Or at least they fail to gain the enormous best-seller audiences typical a decade ago.

I think there may be somewhat less public acceptance of pseudoscience now than ten years ago. A bit more of a pragmatic, no-nonsense attitude prevails now. It probably arises from major economic, political, sociological, and educational trends. Society has indeed changed. The social upheavals of the sixties and early seventies are over. People no longer need to embrace unorthodox ideas and lash out at science and reason to prove they're not part of the establishment. No one worries about that anymore. Educational standards are at long last being tightened up. And the idea that all ideas are equal has begun to be replaced by a willingness to throw out those that don't work.

* * * * *

These generalizations bring me to another matter: the shortage of good empirical data about popular beliefs and attitudes concerning fringe sciences and the paranormal. Most studies are limited in their scope and duration; few deal with the general population or allow longterm comparisons over years and decades. We need better survey data. We need to understand where we are and where we've been to better understand where we're going.

According to the Gallup youth survey (see p. 113), among teen-agers belief in ESP has lessened from 67 percent in 1978 to 59 percent in 1984, but belief in astrology has increased from 40 percent to 55 percent over the same period. Has belief in astrology *really* increased among young people since the 1970s? That is counter to my impression, but I could be wrong. As for the apparent lessening of belief in ESP, on one hand it contradicts my view that the whole area of psychic powers has at least as vast a hold on the public as ever. On the other, it may support my view of a general decrease in credulousness. Which is the more important interpretation? In any event when six out of ten in the population believe in a phenomenon that even most leaders in parapsychology agree has not been demonstrated, it is cause for some concern. Or is it? What does "believe in [fill in the blank]" mean? How strong is the belief? How does the subject interpret the question? To the scientifically inclined, "Do you believe?" is both an imprecise question and an uncomfortable concept. We need to understand the subtleties of belief to be able to gauge its significance when applied to a given topic, and to do so we need more sophisticated data.

* * * * *

I want to thank the many readers who have sent in thoughtful criticisms and suggestions for improvements in the SKEPTICAL INQUIRER. I am mindful that our audience is diverse. While almost all of you appreciate the effort to bring a scientific attitude and critical scrutiny to paranormal claims, each of you comes to the task with a different background and different attitudes, experiences, and perceptions. To many, this is your first encounter with sustained skeptical scrutiny of the paranormal. Most find it refreshing. To others it can be a bit unsettling.

The most frequent criticism is that we are "too harsh." I agonize over that one. Ideally we should be aggressive in our investigations while restrained but firm in our reports of results. Our writers, however, are rarely confronted with an ideal world. I hope our tone is professional and not unduly immoderate. I think it usually is. But sometimes the levels of counterattack skeptical investigators are subjected to are not really conducive to polite diplomacy. For my part, I try to see that discussion and debate are carried on in as high a tone as possible. But our goal is to be honest and direct, to do our best to determine the facts, and to give them to you straight.

A related criticism sometimes heard is that we don't always take the claims we examine seriously enough. Sometimes, it is said, we seem to be making fun of people's views. I agree that we need to bring compassion to our efforts, always understanding the human need for supportive beliefs and realizing the tentative and uncertain nature of all scientific knowledge. What I think is called for is a sense of proportion. Our approach should be governed by the seriousness of the claim. In the late twentieth century, an assertion that the earth is flat or that it is hollow and that UFOs come out through a hole in the North Pole is silly. To respond seriously to all such claims—and exactly these claims and hundreds of others like them are still being made—is not reasonable. Here, as Paul Kurtz noted in our Summer issue, Martin Gardner's laudatory reference to H. L. Mencken's "one horse-laugh is worth ten thousand syllogisms" is both rational and appropriate. We all have only so much time. The patently absurd and silly don't deserve lengthy rebuttal. But many—perhaps most—of the claims we deal with are seriously presented (or recounted) by honest people with all good intentions. Many are along the edges of science where the boundaries are fuzzy and ill defined. The critical response should be proportional to the degree of seriousness of the claim and the degree of uncritical public acceptance it enjoys. I think we do pretty well on this score.

Another reservation expressed is that our evaluative efforts are fundamentally negative. Some feel that they add nothing positive to the sum total of human knowledge. I disagree. First (as I emphasized

in a response to a letter in our Fall issue), almost all of us involved in this effort do spend the bulk of our time trying to advance science in the usual ways—research, teaching, writing, etc. Second, evaluation of claims and the ranking of evidence is an essential part of science. Stephen Jay Gould and Carl Sagan have both written eloquently on the positive values of debunking wrong ideas to make room for correct ones. One of our readers put the matter very well, I thought, in a letter to me: "Some of my friends and associates to whom I have shown your publication ask me if you stand for anything 'positive,' or if CSICOP 'merely' spends its time in 'debunking' and 'tearing down' the ideas of others. My standard answer to this question is that in fact your approach is at root entirely 'positive,' i.e., that you are not simply 'debunking' the ubiquitous nonsense which surrounds and threatens us but that you are upholding, emphasizing, and revitalizing the logos of beauty of reason which sometimes offers us a peek at truth. I rarely say it in such flowery terms—usually I just say that you make good sense!"

Although none of us has a corner on the market, I'd like to think that more often than not we *do* make good sense. In today's world, I consider that high praise.

Besides, out-and-out "debunking" is only a small part of what we do. Most of our effort is devoted to straightforward investigation and analysis of claims and discussion of issues. But I *do* think it would help if we would emphasize less what we are against and more what we are *for*—good science, high-quality scholarship, critical thinking, a questioning attitude, and the vigorous testing of extraordinary claims.

Many readers write to ask us to direct our critical guns at religion, politics, or any of a variety of ideologies. That's not our mission. For one thing, other publications already do that. For another, our expertise and interest is in assessing claims made in the name of science. We specifically limit ourselves to topics on which testable scientific claims have been made. We ardently support each person's right to hold any belief he or she wishes. Our nation is founded on freedom of belief, and it is a precious heritage. We are not concerned with beliefs per se, but we are concerned with inaccu-

rate claims that science supports certain beliefs. And we are concerned when proponents of a belief-system attempt to force their beliefs on others and use fallacious scientific evidence or arguments to do so.

*****

I consider it a genuine privilege to be involved in the effort to scientifically evaluate exotic claims on the fringes of science. Ten years ago, when I was editor of *Science News*, I wrote to Martin Gardner in response to a criticism he had made of something we had published. I told him we needed more people like him to help those of us in the media get scientifically valid information about the enormous number of new and strange claims readers were urging us to write about. We wanted to do a responsible job, but generally the only readily available information came from proponents. Scientists and other well-informed experts needed to get out of their ivory towers and get involved in an important campaign of investigation and public education.

Little did I imagine that only a couple of years later CSICOP and the SKEPTICAL INQUIRER would be formed to encourage and implement just such efforts (or that I would have a role in them). Through the enormous enterprise and cooperation of scientists and scholars worldwide and with the encouragement of our readers, we have in the intervening years produced a considerable body of evaluative work. The task of investigating and evaluating claims of paranormal powers and of alleged events on the fringes of science will never be over (new claims will always pop up and discarded ones never really die). And we can never be satisfied with what has been accomplished. But all in all, given the intensity with which paranormal claims and beliefs are held and argued and the lack of a scientific tradition for dealing with them, I think we have done rather well.

Thank you all for your continuing support. We hope to be around for a long time.

—KENDRICK FRAZIER, *Editor*

News and Comment

Touting Psychic Wonders in the Mainstream Media

IF ANYONE thinks the only publications that publish one-sided pro-paranormal articles are the supermarket tabloids, think again. The experience of the past eight months shows regrettably that mainstream periodicals can be just as culpable.

The Jack Anderson column, syndicated in hundreds of newspapers worldwide, distributed two columns last spring reporting on supposed secret military research on psychic phenomena, uncritically repeating dramatic claims of psychic successes.

Forbes magazine, a bastion of the tough-minded business world, published a soft-minded ode to "clairvoyant, telepathist, psychokineticist" Uri Geller that implied that this long-discredited magician was still someone to take seriously ("Closing the Psychic Gap," May 21, 1984). "What if he knows what the stock market or the gold market or the bond market will do next week, next month, or next year?" worried *Forbes*. It cautioned readers not to laugh at the possibility.

Computerworld, an ad-packed weekly publication normally devoted to detailed no-nonsense articles on computer hard- and soft-ware, chipped in with a wide-eyed feature recounting demonstrations at which Geller took credit for erasing computer tape and stopping a computer graphics system. The same issue (June 11, 1984) also carried an article contending that some computer crashes are a result of mind over matter. "It looks like Uri is up to his old tricks," one reader, Daniel R. Lunsford of Carmichael, California, told the SKEPTICAL INQUIRER. "I am not a professional magician, as Uri is; I'm a systems programmer. But with very little effort, I could erase a floppy I was given, or at the very least, render it unreliable. . . . I can think of several ways to stop a display, depending on how much prep time I had, and what kind of terminal was involved." *Computerworld* did publish at least two letters (July 9), one from Robert Sheaffer and one from me, criticizing the articles and suggesting sources of scientific information on these matters.

Ladies' Home Journal, hardly a heavyweight magazine but several cuts of respectability above competitors like *Cosmopolitan*, published a lengthy article recounting all sorts of psychic wonders and proclaiming that "now eminent scientists and prestigious universities are exploring this fascinating subject" ("Hidden Powers of the Mind," August 1984). The article also presented a 30-question questionnaire, "How

Computer crashes: A case of mind over matter?

By John Desmond
CW Staff

People who seem to cause computers to break down or who have anxiety attacks when they use computers may or may not be jinxes, but they are definitely not alone.

A Syracuse University researcher of engineering anomalies is studying why some people seem to jinx computers and other microelectronic devices. Dr. Robert Morris, research coordinator at the Syracuse Communication Studies Laboratory, will present his findings on computer anxiety to the ... Association ... August

anomalously interact with equipment" in a way that produces frequent breakdowns, he said in a recent interview.

Morris refers to such jinxes as "malfunction-linked" people, while he calls those without such powers "linked" ...

Malfunction-linked people identified in a technology attitude questionnaire constituted 13 of Morris' 33 subjects. During the experiment, the computer crashed only when one of those 13 using it; it never crashed for any of 20 subjects who had no computer anxiety.

The researcher has several theories why that happened; they range from simple misunderstanding of the machine by the operator to the possibility that electromagnetic charge was created by the tenseness of the operator — a notion unconventional theory, drawn from research, suggests that people have the ability to move physical objects with the mind — is at work. ... search at Princeton.

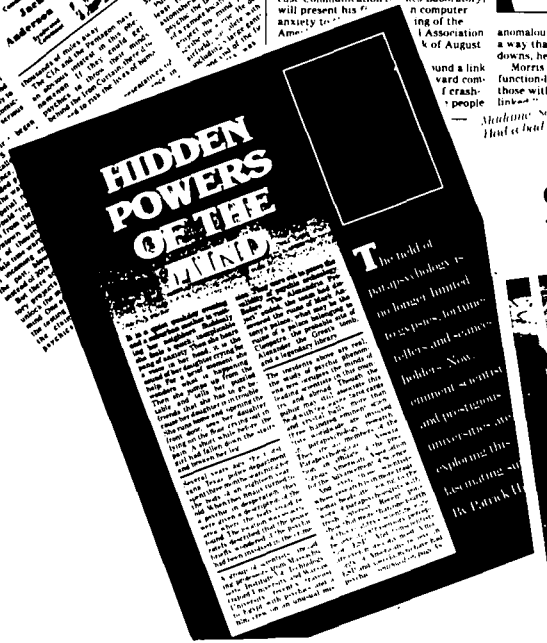
by James Cook

Madame Sosostris famously clairvoyante
Had a bad cold, nevertheless
Is known to be the wisest woman in Europe
With a wicked pack of cards. Here, said she
Is your card, the drowned Phoenician Sailor
(Those are pearls that were his eyes. Look!)
Here is Belladonna, the Lady of the Rocks,
The lady of situations.
Here is the man with three staves, and here the Wheel
And here is the one-eyed merchant, and this card,
Which is blank, is something he carries on his back,
Which I am forbidden to see. I do not find
The Hanged Man. Fear death by water.
I see crowds of people, walking round in a ring.
Thank you. If you see dear Mrs. Equitone,
Tell her I bring the horoscope myself:
One must be so careful these days.

T. S. Eliot, The Waste Land

What if you knew what the stock market was going to do?

Closing the psychic gap



Alan Vaughan

TOWARD A TECHNOLOGY OF PSI

A young field of research is, by definition, hard to evaluate. When its subject matter seems to show radically unfamiliar behavior and evokes strong emotions, it's even harder

JACK ANDERSON

Secret Psychic Research

Psychic Are You?" prepared by the Graduate Parapsychology Program of John F. Kennedy University in Orinda, California. It promised to publish the results in a future issue.

Less widely distributed but nevertheless respected publications contributed their share to the pro-psi scene.

U.S. Black Engineer, the national magazine for black engineers, published an 8-page glossy article ("How Real Is the Psi Gap?" Summer 1984) claiming that "recent CIA and NSA research supports the electronic basis of psychic phenomena."

And in November 1984 the science-fiction magazine *Analog* (which several years ago gave SKEPTICAL INQUIRER a highly positive review) published an alleged science-fact article by psychic Alan Vaughan, "Toward a Technology of Psi." The only skeptical words in it were directed at skeptics of the paranormal. The article prompted Martin Gardner to fire off a letter to *Analog's* editor beginning, "How in the name of responsible science could a quality SF magazine capable of running a fine article on quantum mechanics be willing in the same issue to publish a totally irresponsible article on parapsychology?" Vaughan, Gardner pointed out, "believes everything from psychic levitation to paranormal spoon bending." As evidence of Vaughan's past record for acumen, Gardner merely listed four paragraphs of Vaughan's incredibly off-base "psychic" predictions over the past decade (*SI,* Summer 1981). "This is the man you chose to tell your readers about the 'technology of psi'?"

All of these articles suffered from naiveté, misinformation, and the failure to include critical scientific perspectives. Nor did they offer any evidence that their authors had even *attempted* to learn how most psychologists and scientists view these claims. The exception was the first Anderson column, in which there were some critical sentences near the beginning.

Several of the magazine articles made somber reference to that silly, one-sided Congressional Research Service "report" written last year by psi-believer Christopher Dodge (*SI,* Spring 1984). It all sounds so "official."

The Jack Anderson columns (April 23 and 24, 1984) directed their reporting efforts to credulously repeating unevaluated anecdotal claims that support the case of pro-psychic proponents. These proponents have much to gain if they can make it appear that the military takes psychic claims seriously.

Apparently they have been successful. ". . . Remote viewing has become almost universally accepted in the intelligence community," said the first Anderson column. The second continued in the same vein: "Psychics described the contents of locked filing cabinets; they mentally breached the security of secret military installations. Earlier, they had discovered the rings around Jupiter years before their existence was scientifically established by satellite photographs." How come we never heard about these psychic discoveries of Jupiter's rings until *after* our Voyager spacecraft found them? How are we to know if the contents of locked file cabinets were accurately described? Somebody is taking the word and testimony of pro-psychic proponents a lot more seriously than past experience shows is justified.

If the claims recounted in Anderson's reports were true—discovering details about a Soviet secret nuclear-testing area by remote-viewing, for instance—they would indeed be shocking. But much of the information in the Anderson columns came, directly or indirectly, from those "two respected academics" (Anderson's words) Harold Puthoff and Russell Targ. Puthoff and Targ's work in physics may be

respected, but their work in paraphysics has for at least eight years been repeatedly riddled by critics. Some reference to the detailed and serious critiques by well-informed researchers of their earlier claims could surely have been dug up by Anderson's investigative journalists. We'd have been happy to supply a list.

Targ's and Keith Harary's new book, *Mind Race,* has prompted many news and feature articles this year about remote-viewing. Anderson, Vaughan, and the articles in *Ladies' Home Journal* and *U.S. Black Engineer* all draw amazing-sounding anecdotes from it. One problem is that no full-fledged critiques of *Mind Race* have been available. We trust that this issue of the SKEPTICAL INQUIRER (see the lengthy article by Ray Hyman and the column by Martin Gardner) will fill that gap. No responsible journalists now have an excuse to propound on the wonders of remote-viewing without at least some reference to the way Targ and Harary consistently, to borrow from Hyman's title, outrace the evidence.

—*Kendrick Frazier*

Quackery: 'A Massive and Growing Problem'

QUACKERY COSTS the American public in excess of $10 billion a year, concludes a landmark study by the Subcommittee on Health and Long-Term Care of the House Select Committee on Aging. The subcommittee is chaired by Congressman Claude Pepper of Florida.

A comprehensive and hard-hitting committee report, *Quackery: A $10 Billion Scandal* (see Some Recent Books, p. 180), summarizes the results of an intensive four-year review of quackery and its effects on the elderly.

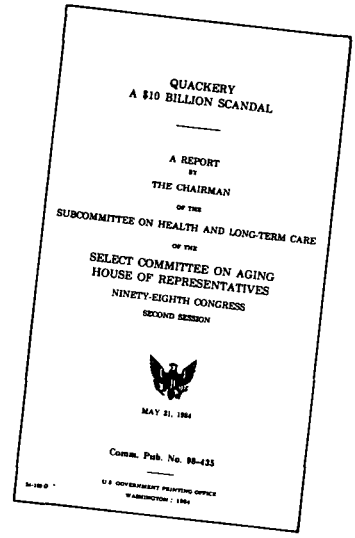
More than two dozen committee staff members, four dozen medical and scientific specialists, and persons from five federal agencies were involved in the study. "It is the most comprehensive investigation of medical quackery and related health care frauds ever undertaken," said the report.

The committee defined quackery in clear terms: "As used in this report a quack is anyone who promotes medical schemes or remedies known to be false, or which are unproven, for a profit." At another point it refers to quackery as "the promotion and sale of useless remedies promising relief from chronic and critical health conditions."

The report covers quack treatments for arthritis, cancer, and aging; witchcraft and spiritual healing; cure-alls and "other curious cures"; paper promises; quack devices; and self-styled clinics and other organized quackery. It also examined enforcement efforts against quackery.

"Quackery has traveled far from the day of the pitchman and covered wagon to emerge as big business," Pepper writes in the preface. "Those who orchestrate and profit from the sale and promotion of these useless and often harmful 'health' products are no longer quaint and comical figures. They are well organized, sophisticated and persistent."

The $10 billion monetary cost of quackery is only part of the loss. Said Pepper: "The cost of quackery in human terms, measured in disillusion, pain, relief forsaken or postponed because of reliance on unproven methods, is more difficult to measure, but nonetheless real. All too frequently, the purchaser has paid with his life."


QUACKERY
A $10 BILLION SCANDAL

A REPORT
BY
THE CHAIRMAN
OF THE
SUBCOMMITTEE ON HEALTH AND LONG-TERM CARE
OF THE
SELECT COMMITTEE ON AGING
HOUSE OF REPRESENTATIVES
NINETY-EIGHTH CONGRESS
SECOND SESSION

MAY 21, 1984

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WASHINGTON : 1984

The committee found that the impact of quackery has been increasing and growing in sophistication. At the same time, public and private efforts to combat quackery "have diminished, been redirected or disbanded." Of the many federal agencies having various responsibilities for the program, "Only the U.S. Postal Inspection Service maintains a proactive program to identify quack products sold in violation of federal statutes." The Food and Drug Administration was once a formidable anti-quackery force, said Pepper, but now directs "less than .001 percent of its budget to the control of quackery."

"Quackery reflects pseudoscience at best," said the report. It noted that modern-day scientific knowledge has changed but not diminished it. "It has, in fact, grown in size and sophistication. Quackery now invades nearly every aspect of our lives, and, at points, attracts adherents with near religious zeal."

"Medical quackery is a massive problem. It is growing at an alarming rate." The amounts spent on quackery "dwarf what is spent for legitimate research." The study found that "thousands of people every year suffer needless injury and death." Phony cancer cures are the biggest fraud, followed by questionable arthritis cures and anti-aging remedies, the study found.

Examples of questionable arthritis remedies discovered by the study included bee venom, ant venom, sex hormones, cocaine, and green-lipped mussel extract. Phony cancer cures included eating grapes, ingesting ground-up diamonds, drinking the juice from Easter lilies, and taking coffee enemas. Quack devices included an ordinary vibrator promoted as an arthritis-curing radon generator, the spectrochrome (essentially a metal box with a 1,000-watt lightbulb in the center), and the "solorama board" (essentially a heating pad).

The fastest growing "and maybe the most profitable of questionable medical remedies" are phony "youth cures." The committee found that one promoter was making more than $110,000 a day in sales of phony diet pills. Another made $13 million in nine months on a phony hair-restoring

nostrum.

As for witchcraft, psychic healing, and spiritual healing, the committee found all sorts of bizarre remedies promoted, from voodoo to "psychic surgery" to fried frog juice (as an arthritis salve). So-called spiritual healers "promise cures over the telephone once they have received the sufferer's money. . . . The committee could find no scientific evidence that any of these methods were effective."

The committee investigated thousands of ads promising questionable health benefits. It found more than 90 percent of these questionable ads to be fraudulent. The claims ranged from the mild ("How I cured my dog of arthritis") to those that were "deadly dangerous and not the least humorous. . . . About 75 percent of the products reviewed could be said to be potentially harmful."

"Quackery is an enormous problem with a severe impact on the health and well-being of our citizens," the committee concluded. It called for a "full-scale, concerted effort" involving federal, state, and local agencies to begin to make a dent in the problem. Stringent criminal penalties are necessary, including "at a minimum" an increase in sentencing to five years in prison and a $5,000 fine for each violation. Evaluation and enforcement efforts need to be boosted commensurately (e.g., the Postal Service needs to be given the power to compel testimony under oath, a right it does not now have), and funding for scientific research into arthritis and cancer should be increased.

Contributing to the problem are widespread public misperceptions. A joint federal study "found the nature and prevalence of fallacious or questionable health beliefs to be enormous." Three-fourths of those surveyed believe that extra vitamins provide more pep and energy. One fifth thought diseases like arthritis and cancer are caused by vitamin or mineral deficiencies. The committee found that purveyors of quackery thrive on public misinformation and misunderstanding. They offer bogus panaceas, make large profits, and then become "respectable."

"Beneath their mask of respectability lies more harm than just the dollars diverted from those in need," the study concluded. "Their take includes the health that could be protected and improved by proper medical procedures. It must also be measured in terms of disillusion, despair, misery, and death."

—Kendrick Frazier

Bible-Science Conference: Emphasis on Geocentricity

THE 1984 National Bible-Science Conference was held on June 28-29 at the Brookside Baptist Church just outside Cleveland. The Bible-Science Association, an international creationist organization headquartered in Minneapolis, sponsors (and funds) major conferences every two years. This was an "off-year" conference, sponsored and funded by the Northcoast Bible-Science Association (of Ohio) and thus smaller and more regional than last year's Twin Cities extravaganza. Attendance was only about 60, compared with about 200 in 1983.

Three nationally known creationists spoke: Duane Gish of the Institute for Creation Research, Wayne Frair of King's College (Briarcliff Manor, N.Y.), and Pastor Walter Lang of the Bible-Science Association. Other speakers were well known in creationist circles. As usual, there was little serious effort to offer evidence for creation. Speakers typically flailed at a straw man labeled "evolution" and then produced "the only alternative."

The atmosphere was more like a revival meeting than a scientific conference. Four speakers were ordained clergymen, and others were lay evangelists. Scriptural texts flew fast and furious, and many of the supposedly scientific lectures were punctuated with fervent "Amens" emanating from the pews. One speaker was so overcome by the perversity of the "Satanic counterfeit" of heliocentricity that he apparently wept, and he began shouting that the time has come to fight for the truth.

Indeed, the most remarkable feature of the conference was the emphasis on geocentricity. Of eighteen speakers, four spoke in favor of geocentricity and a fifth was a well-known geocentrist who addressed a different topic. While this proportion of geocentrists is not representative of creationism as a whole, it illustrates a growing trend.

Gerardus Bouw of Baldwin-Wallace College and James N. Hanson of Cleveland State University are the most prominent members of the Northcoast Bible-Science Association. Both are astronomers by training and computer scientists by profession, and both candidly ground their geocentric views in a literal interpretation of the Bible. Their presentations dealt with the "warfare between the Bible and science." They claimed that Copernican astronomy and Charles Lyell's geology were ploys to discredit the Bible, and they offered numerous arguments, both scriptural and scientific, for geocentricity. Interestingly, there were no significant challenges from their fellow creationists. Duane Gish, who sat in a front pew, commented that the angular momentum of the sun is a "great problem" for evolution, but if he saw any problems with geocentricity he didn't mention them.

Most bizarre was a joint presentation by Marshall and Sandra Hall, authors of *The Truth: God or Evolution?* The Halls are convinced that a flaw lurks in the "Satanic counterfeit" of heliocentricity. Because they believed the moon was the key, they went to Gibeon, where Joshua commanded the sun and the moon to stand still, and prayed to the Lord for enlightenment. "We've asked for the wisdom," said Marshall. "He gave it to us. We're going to give it to you. Any minute now."

Unfortunately, the Halls' presentation was rambling, disconnected, and garbled beyond belief. They seemed to argue that during the solar eclipse of May 30, 1984, they observed the moon's shadow moving *the wrong way*, demonstrating the flaw in Satan's heliocentric lie. Some listeners thought the Halls had misinterpreted the reversed image formed by a pinhole camera, but they were so incoherent that no one knew for sure what they were talking about. At any rate, they profoundly embarrassed the more sophisticated geocentrists, whose Tychonian system predicts precisely the same observations as the Copernican system.

While most creationists don't advocate teaching geocentricity in public schools, they do want equal time for "creation science." A dissenter, engineer Richard G. Elmendorf, blasted the "Two Model approach" as a misrepresentation of religion.

"Creation is essentially a religious faith," said Elmendorf. "Why deny it? Why hide it? Why try to sneak religion

into the public schools as sort of a Trojan horse? Of course, proponents of the Two Model approach say there is a distinction between what they call scientific creation and Biblical creation. The idea of a creator isn't necessarily the God of the Bible. The idea of a glorified catastrophe is not necessarily the Genesis Flood. But this isn't fooling anybody. The real issue is the Bible versus evolution, and everybody knows it." Elmendorf wants to have evolution banned from the schools on the grounds that it is also religion.

The most interesting report on new research was by Hugh G. Miller and the Reverend Carl Baugh, who discussed their excavations at the Paluxy River in Texas. Besides all the "human footprints," someone recently discovered two travertine skulls, apparently washed out of the 120-million-year-old rock of the riverbed. They displayed the skulls, which had been sawed in half to show their internal structure. Baugh identified one as a cat and the other as either a human infant or some sort of primate. Since primates and cats evolved much later than 120 million years ago, Baugh claimed these fossils contradict evolution.

After the presentation, two skeptical scientists, Emmanuel Sillman and Frank Zindler, hurried up to the pulpit and closely examined the "skulls." They came back amused and amazed. Sillman, who taught comparative anatomy for twenty years, said the objects bore only a vague resemblance to genuine skulls. The "hominid skull," for instance, was a rock with two different-sized pits that the creationists interpreted as orbital openings. Zindler identified the rocks as weathered nodules of silicified limestone.

The creationists think they're winning. "The scientific world is dead afraid of us today," said Pastor Walter Lang. He is wrong. Most of the scientific world ignores today's creationists just as the scientific world of the nineteenth century ignored the Bible-waving flat-earthers. Unfortunately, the handful of zealots convened in Cleveland should not be underestimated. Their ridiculous "tracks" and "skulls" are gospel to millions of voters. Perhaps the scientific world *should* be dead afraid.

—Robert S. Schadewald

Robert Schadewald has covered the creationist, geocentrist, and flat-earth movements extensively for the SKEPTICAL INQUIRER and other publications.

Gallup Youth Poll Finds High Belief in ESP, Astrology

NATIONAL SURVEY data on belief in the paranormal is surprisingly sparse. One of the more interesting contributions came this summer from a survey of youth by the Gallup Poll.

The Gallup survey asked a representative national sample of 506 U.S. teenagers, age 13-18, "Which of the following do you believe in—ghosts, the Loch Ness Monster, Sasquatch (Bigfoot), witchcraft, ESP, clairvoyance, angels, astrology?" The survey was conducted by telephone from January through March 1984. The results were reported in June.

Belief in angels, ESP, and astrology headed the list of teen paranormal beliefs. Of those surveyed, 69 percent said they believed in angels, 59 percent in ESP, and 55 percent in astrology. The figures for the other beliefs were considerably smaller. Twenty-eight percent believe in clairvoyance, 24 percent in Sasquatch, and only 18 percent in the Loch Ness monster.

The belief in ESP represented a

Trends in Beliefs

	1984	1978
	%	%
Angels	69	64
ESP	59	67
Astrology	55	40
Clairvoyance	28	25
Bigfoot	24	40
Witchcraft	22	25
Ghosts	20	20
Loch Ness monster	18	31

Supernatural Beliefs—1984

	National	Male	Female	Ages 13-15	Ages 16-18
Angels	69%	68%	71%	73%	65%
ESP	59	60	59	57	62
Astrology	55	52	58	59	51
Clairvoyance	28	27	28	28	28
Bigfoot	24	34	14	23	25
Witchcraft	22	25	19	20	24
Ghosts	20	22	17	19	21
Loch Ness monster	18	25	10	18	17

Source: The Gallup Organization, Inc., Princeton, N.J.

slight drop from the 67 percent who believed in it in a smaller Gallup youth poll in 1978. The belief in astrology, in contrast, was an increase over the 40 percent who believed in it in 1978.

The belief in Bigfoot and the Loch Ness monster appears to be dropping, Gallup noted. The 1984 figures are considerably lower than the 40 percent (for Bigfoot) and 31 percent (for Nessie) who stated belief in 1978. Belief in Bigfoot in 1984 was higher in the west (40 percent) than in other parts of the country.

In general, reported Gallup, young men are about twice as likely as young women to say they believe in Bigfoot or the Loch Ness monster, and also show a greater tendency to believe in ghosts or witches. Young women, on the other hand, are more prone to believe in astrology.

Gallup found that above-average students and those from households where the parents are well educated show no less of a tendency to believe in the supernatural. "Indeed, there is a tendency for the educationally advantaged to report above-average belief in such phenomena as ESP, clairvoyance, and witches."

The poll found that black teens are by far the most skeptical segment of the population, with only about one in ten believing in ghosts, witches, or large undiscovered creatures.

These results may indicate that paranormal belief involves a certain element of white middle- and upper-middle-class dilettantism.

As might be expected, regular churchgoers expressed greater belief in angels (76 percent) than nonchurchgoers (61 percent). But for all the other supernatural phenomena listed, nonchurchgoers were the greater believers.

Refreshingly, Gallup's report on the survey correctly stated prevailing scientific perspectives: "ESP has long been the subject of scientific experimentation but to date the scientific community has remained skeptical about its existence." It also said that "the scientific community in recent years has been alarmed by beliefs in astrology, which it considers to be totally without scientific merit," and noted that "many scientists probably will be disturbed to learn that belief in astrology among teens has risen" since 1978.

—*K.F.*

Jury Believes Claims of Perpetual Motion

A LOS ANGELES jury acquitted a lawyer and an inventor of charges concerning a bogus perpetual-motion machine because, said the exasperated prosecutor, the jurors actually believed the defendants' unfounded claims about the machine.

After a three-month trial and two and a half weeks of deliberation, the jury on August 10, 1984, found lawyer Jackson Chandler, of Rancho Cucamonga, and inventor Carl M. Aegerter, of West Covina, not guilty on more

than 50 counts of theft, securities fraud, and conspiracy. Prosecutors had accused the two of telling investors that their machine could produce more energy than it consumed.

The prosecutor, Deputy District Attorney James Green, charged after the acquittal that jurors actually believed the wild claims the defendants had made about their machine. "The reason for [the verdict] was that the jury believed that it was a machine that delivered more energy than went into it," said Green. "I say that because they told me so. That's why it's so damn incomprehensible to me."

Green planned to seek a new trial on 19 additional charges on which the jurors had been unable to reach a verdict. The prosecution claimed Chandler and Aegerter raised $685,000 from people investing in the machine.

—*K.F.*

Hynek Moves UFO Operations to 'More Open' Arizona

J ALLEN HYNEK has moved his UFO research operations to

Arizona.

The founder and scientific director of the Center for UFO Studies (CUFOS), long based in Evanston, Illinois, announced in August that he was establishing an international research center dedicated to the investigation, research, and study of the UFO phenomenon in Phoenix.

A CUFOS news release about the move stated: "He and his scientific colleagues consider that UFOs represent one of the most important research areas in the world today, pursuit of which offers great promise for practical, as well as theoretical results. This is the primary reason for the establishment of the new Research Facility."

In this belief Hynek is virtually alone. Scientific bodies like the National Academy of Sciences and NASA, in their periodic assessments of important scientific questions and research challenges in space science and astronomy, have never listed UFOs as a promising research field. Little has changed in scientific circles since the 1969 Condon Report, which concluded: "Nothing has come from the study of UFOs in the past 21 years that has added to scientific knowledge . . . [and] further extensive study of UFOs probably cannot be justified in the expectation that science will be advanced thereby."

The CUFOS news release did not indicate why Hynek was moving his research operations to Arizona, but news reports of a press conference he held said he chose that state because it is a center for astronomical research, it has a burgeoning high-technology industry, and the "people in general have a more open attitude."

They also reported that unidentified sponsors in Arizona have provided $2 million in donations for his UFO research. "The source of the funds cannot be divulged," Hynek told the *Chicago Tribune*, which noted that the scientific community has been overwhelmingly skeptical of UFO claims. "I'm rather superstitious about revealing things of that sort," he confessed.

—*K.F.*

Journalism Students Urged to Examine Pseudoscience

CAN SCIENTISTS do anything about the naiveté and gullibility general newspaper and television reporters often show toward pseudoscience and fringe-science?

The Austin Society to Oppose Pseudoscience (ASTOP) thinks education is one answer. At its 39th regular meeting on August 20, 1984, it adopted unanimously a resolution recom-

mending that the College of Communication at the University of Texas at Austin "require for its undergraduate degrees in communications a course similar to or equivalent to Physics 341, Pseudoscience, and that it recommend the taking of such a course to all graduate students in college."

In a letter on August 28 to Robert C. Jeffrey, dean of the college, Lawrence Cranberg, acting president of ASTOP and himself a physicist, noted that the resolution "represents the fruit of many months of discussion within the Society of the reasons for the widespread belief in pseudoscience in America, and the conclusion that the mass media, both print and electronic, must bear a very substantial share of the responsibility for this state of affairs."

It urged the University of Texas to become a pace-setter "in dealing with the problem of dissemination of superstition and pseudoscience by the media."

The course in question, Cranberg says, "is designed not only to expose the foibles of pseudoscience but at the same time to provide positive instruction in the basic principles of physical science and its methods." Cranberg told the SKEPTICAL INQUIRER that other, non-physical-science courses, such as those dealing in the scientific study of folklore, would also help "counter superstition and credulity among prospective journalists."

—*K.F.*

The Disorder of Inanity

Who speaks reason to his fellow men bestows it upon them. Who mouths inanity disorders thought for all who listen. There must be some minimum allowable dose of inanity beyond which the mind cannot remain reasonable. Irrationality, like buried chemical waste, sooner or later must seep into all the tissues of thought.

—Richard Mitchell, *Less than Words Can Say* (New York: Little Brown, 1979)

The Fashion to Know No Science

It is precisely because it is fashionable for Americans to know no science, even though they may be well educated otherwise, that they so easily fall prey to nonsense.

—Isaac Asimov, "The Armies of the Night," in *'X' Stands for Unknown* (New York: Doubleday, 1984)

MARTIN GARDNER

Notes of a Psi-Watcher

From SRI to Delphi: The Curious 'Mind Race'

THE MIND RACE, by Russell Targ and (Stuart) Keith Harary. was published this year by Villard Books, a division of Random House. Physicist Targ was formerly at SRI International, where he and his associate Harold Puthoff "validated" the clairvoyant powers of Uri Geller. *Mind-Reach,* an earlier book by Targ and Puthoff, concerned their work with Geller and their experiments in clairvoyance, or "remote viewing," as they prefer to call it.

The Mind Race summarizes the SRI's remote-viewing research, but most of the book is devoted to the theme that psychic powers are perfectly normal, that anyone can develop these abilities by following the book's simple instructions. Geller has mysteriously vanished—there is not a word about him in the book. Puthoff, once an ardent Scientologist, remains at SRI, but Targ has left the big Menlo Park think-tank to join Harary in founding a psi-research organization they call Delphi Associates.

Keith Harary, better known by his nickname "Blue," is famous in psi circles for his OBEs (out-of-body experiences) at the Psychical Research Foundation, in Durham, North Carolina. His pet kitten, Spirit, was placed in a cage, and Blue, in another building, would project his astral body into the lab. The kitten reportedly calmed down whenever Blue's invisible body arrived. In one test, reported by the foundation's director, William Roll, Spirit meowed 37 times during the control period, but not once during the OBE period.

There are, say the authors, nine ways in which psi can be helpful to the readers: detecting hidden defects in their cars; locating parking spots, advancing in business by following correct hunches, winning at racetracks and casinos, finding lost children, "tuning in to the feelings and emotions of distant friends, relatives, or sweethearts," being "in the right place and at the right time for worthwhile opportunities," using the psi content of dreams, and "taking along an unlikely item that will later prove to be invaluable" when going somewhere.

The authors have not the slightest doubt that psi powers are useful in gambling. Targ won a lottery on a hunch, he tells us, while the book was being written. Blackjack is recommended as the best cardgame at which "you may reliably win." One of Targ's nameless remote viewers used psi successfully on slot machines at Lake Tahoe. "The scheme worked wonderfully, for more than an hour," then suddenly she had a strong feeling about a nearby machine. While she fumbled for a quarter, the woman next to her played the machine, winning the jackpot "that

Scientists believe this man can leave his body and 'travel' through walls

By PAUL DOUGHERTY

A YOUNG university graduate has stunned scientists with his apparent ability to leave his body and travel through solid walls.

The "mind traveler" is 23-year-old Stuart Harary, and new researchers at prestigious Duke University, N.C., are backing up his claims following a series of amazing tests.

Observed under strict testing conditions, Harary has reportedly:

• Left his body and traveled to distant rooms, reporting in great detail on what is happening there.

• Moved into the body of a cat in another room and performed several feats involving the animal with scientists watching.

• Made "mind trips" to the rooms of several research workers, who reported being awakened in the night by floating orbs of light.

Harary is still undergoing tests three times a week at Duke Medical Center, where he is wired up to seven electronic monitoring devices.

One of the most startling displays of Harary's mind powers involved his pet cat. Harary and the animal were placed in separate rooms, while scientists checked their reactions.

Harary described rising out of his body, gazing down at himself and talking about it without someone coming up with a similar experience," he said.

"We had an engineering student who came in here to see what we were doing.

"When we started talking about it, he recalled getting stuck in a hollow tree when he was young. Then he had the sensation of standing outside it looking at himself in there, with his leg bent a certain way.

"When he saw that, he made the appropriate movements, and freed himself.

"Then you hear cases of combat pilots suddenly getting the sensation of being above the battle, and seeing it whole, including their own aircraft.

"The point is, it happens to all kinds of people. We're hoping we'll be able to tell them just WHAT is happening to them."

Parapsychologist and author D. Scott Rogo told The Star: "There is no doubt in my mind, or in that of others who have worked with Harary, that he does have the uncanny ability to liberate his mind from his body.

"One morning I awoke to see an odd red orb floating quickly through my room. I made a note of the incident at the time.

"Several hours later I found that Harary had had an OOB experience spontaneously at that same time and that he had tried to appear to me.

"Other workers at the P.R.F. have reported darting shadows and flashing lights which seemed to herald Harary's presence."

Harary is still shy of discussing his powers with strangers: "I'm always afraid girl-friends will think I'm crazy if I mention it," he said.

"And I don't advise anyone else to attempt it. It could be dangerous. On the other hand, people at does happen to should be reassured that it doesn't mean they are crazy, or they're dying.

"This is an experience that many people have, and it's appropriate that we should study it."

And so, three times a week, Harary settles back on a couch at Duke Medical Center, wired up to seven electronic monitoring devices, and does — whatever it is that he does.

Fellow workers of this serious young researcher, who shies away from any suggestion that he exploit his talents, flatly rule out any suggestion that he is a fraud.

Stuart Harary, the "mind traveler" whose feats are amazing scientists, talks to The Star at Duke University last week.

Story about Harary's supposed abilities in a 1976 issue of *The Star*.

was waiting for the next coin."

The most sensational claims of Delphi Associates, loudly trumpeted by Targ and Harary in their appearances on the Phil Donahue and the Merv Griffin television shows, have been in predicting the silver futures market. Harary did the precognizing. One forecast was so accurate, the authors write, that the odds against its being chance are 250,000 to 1. With successes like this, why is Delphi seeking funding?

If psi can be used for good purposes, does it not follow that it can also serve evil ends? The authors have not overlooked this. In a section on "How to Defend Yourself Against Psychic Attack," they admit they are not certain that "black magic" (the term is not used in the book, though it appears in the index) is possible—but they add, "we would not be surprised to learn that it is."

To be safe, the authors recommended one of the funniest books ever written, *Psychic Defense*, by Dion Fortune. Who is Dion? Her real name was Violet Firth, a renowned British occultist who died in 1946 after making a fortune by writing crazy books under the Fortune pseudonym. Violet firmly believed that evil psychics could conjure up vampires, werewolves, and other monster "thought-forms" capable of mangling and killing. She herself once managed to fabricate a wolf. The poor woman was constantly being attacked by these vicious thought-forms—in one case it was a cat twice the size of a tiger. You can read all about her in *Mysterious Powers* (a dreadful book published here by Grolier Enterprises in 1976), written by Colin Wilson with Uri Geller as his chief consultant. There is even a two-page spread in blazing color, showing Violet being threatened by the giant cat.

Targ and Harary have only contempt for such cult leaders as Jim Jones and Sun Moon, but L. Ron Hubbard is never mentioned. They are down on occult movies, pyramid power, and communication with plants, but even more hostile toward skeptics who try

to expose fraud. Randi is branded "deceitful," and CSICOP is repeatedly called an organization of "psi-cops" whose goal is "to control your ability to access and interpret information and to walk a beat on your mind. In this respect they are not unlike cult leaders or Big Brother in George Orwell's *1984*."

An attack on me includes a charge so totally false that it deserves some background. In a 1975 *Scientific American* column (reprinted as Chapter 7 of my *Science: Good, Bad and Bogus*) I criticized an effort by Targ and Puthoff to evaluate an ESP teaching-machine. The experiment had three parts. Phase 1, a preliminary experiment, had almost no controls. Positive results encouraged P and T to proceed with the main test, in which rigid controls were imposed by having the data recorded by a computer. The results were negative. P and T blamed this mainly on tension created in the minds of subjects by knowing their guesses were being monitored by a machine. In the third phase, the computer was abandoned and positive results were obtained again, chiefly by their associate Duane Elgin. The experiment had been funded by NASA and supervised by the Jet Propulsion Laboratory.

The JPL considered the experiment a fiasco and, although P and T wanted to continue it with more NASA funds, a new grant was denied. One reason for the JPL's dim view of this work was a report by a person hired by the laboratory to check the original records. He told me that the paper tapes, which recorded the informal results of the first phase, were in poor shape. Of the 145 subjects, 100 were SRI employees or friends and relatives of the experimenters. They worked alone on machines in the lab and kept their own records. Forty-five were schoolchildren who used machines supervised by an experimenter or a teacher. I was told by the JPL investigator that occasionally a machine malfunctioned and then the tape records were kept by hand. He described the tapes as in "bits and pieces," a phrase I quoted. Of course he did not mean that anyone had torn the tapes into little pieces—I never used the word *torn*—but only that the tapes were not in the form of complete unbroken folds for every trial run.

After my column appeared, P and T wrote a strong letter (*Scientific American* published it in January 1976) insisting that all the tapes were intact for every trial run that entered into their statistics. To settle the matter, I was authorized by Gerard Piel, publisher of *Scientific American*, to write to Puthoff and propose that a statistician acceptable to both sides be permitted to examine the tapes at the magazine's expense. This letter was never answered.

Now back to *Mind Race*. On page 157, in a paragraph blasting me, the following incredible passage appears:

> He falsely alleged that the subjects in this experiment tore up their unsuccessful data tapes, and only handed in the successful ones. He said in his article, "I am not guessing when I say that the paper tape records from Phase I were handed in to Targ in bits and pieces." We now know the reason he could say that he "wasn't guessing." This is because he recently confided to a fellow reporter that he had just made it up, "because that's the way it must have happened." The reporter was so shocked at this disclosure, that even though he is not particularly sympathetic to our work, he felt compelled to call up the SRI researchers to pass on this remarkable piece of news.

Note that my alleged remark is inside quotes, as if the authors had a tape recording. Of course I never made such a preposterous statement and couldn't possibly have done so. I wasn't

"guessing" because I had talked to a man who had seen the tapes. The reporter referred to turned out to be Ron McRae. Here are excerpts from the letter he sent to *Fate* after the publisher of that moronic magazine quoted the passage above in full (July 1984) under the heading "Quote of the Month."

> I am the "fellow reporter" to whom Martin Gardner supposedly confided that he had deliberately lied about an ESP teaching machine experiment carried out by SRI in 1974. . . . In fact, I have never made any such claim to Mr. Targ or anyone else. What did happen is that, during an extensive interview for my own book, *Mind Wars*, with Hal Puthoff . . . I mentioned that I had heard another person make such a claim. I did not consider the claim reliable. I was not "shocked at this disclosure," and I did not feel "compelled to call up the SRI researchers to pass on this remarkable piece of news." Mr. Targ's use of fourth-hand, unreliable information is unfortunately typical of the often ill-founded claims in his book.

I considered the paragraph in *Mind Race* libelous because it implied that as a science writer I make up facts to score points. I at once wrote to the chief editor of Villard Books to say I was prepared to sue unless he assured me that the passage would be removed from all later printings and from all spinoffs, such as paperback and foreign editions. The editor apologized for the slander, and when he promised to do what I requested I decided not to take legal action. A similar letter to *Fate* produced an even quicker apology. The editor wrote back that "after conducting our own investigation" they concluded I was absolutely correct. *Fate's* October 1984 issue published a strong apology to their readers for publishing this "baseless accusation," following it with a slightly edited version of McRae's letter. In a way, I am sorry the matter did not go to court. Even if I lost, it would have had the merit of forcing Targ to allow outsiders to examine the tapes in question. There is an important lesson here. When a scientist refuses to allow outsiders to see the raw data of a controversial experiment, one has good reason to suspect a coverup.

For Blue Harary, *Mind Race* is a big step up in his struggle for recognition as a powerful psychic, even though he can't bend spoons or animate pill bottles. For Targ, unquestionably a sincere believer but with a mind as naive and gullible as a child's, the book is a disaster. •

ROBERT SHEAFFER

Psychic Vibrations

IF YOU'VE EVER felt that limiting the realm beyond to humans alone was excessively anthropocentric, you'll be happy to learn about Bill Boyd, who tells fortunes for teddy bears. Boyd, who lives near Kansas City, also does past-life readings for the furry little critters and reads their auras as well. Interviewed on KGO-Radio, San Francisco, Boyd recounted the case history of one teddy bear who was found to have been, in a previous incarnation, a stuffed dog that had been damaged in the 1906 earthquake and later dropped into the San Francisco Bay. So if you feel a powerful, almost supernatural affinity for your teddy, it could be that the two of you were together before, during a previous incarnation.

* * * * *

The latest claim of mermaid sightings involves not just one or two mermaids on a remote beach in Papua New Guinea but a whole city of them on the Atlantic seafloor. So reports the tabloid *Weekly World News*, which cites as its source Vladimir Vrubel, allegedly of the Soviet Academy of Sciences in Moscow, who supposedly photographed the underwater cities from a research submarine. The mermaids are presumed to be actually space aliens, in all probability the same extraterrestrial amphibians who gave the "secrets" about the star Sirius to the Dogon tribe of West Africa. There is a certain logic in that. After all, if mermaids really are superintelligent extraterrestrials who build vast underwater cities, that would explain how they have been clever enough to avoid detection all these years, except by a few vigilant cryptozoologists.

* * * * *

"Attention Computer Users," proclaims the ad in *Computer Currents*, a pub-

lication widely circulated in Silicon Valley. "Do you suffer from—Terminal Tension? Keyboard Kramps? Display Dizziness? Monitor Migraines? Spreadsheet Shoulder? Disk Swapping Stiffness? or Back-up Back?" If so, what you should do is invest a few kilobucks in the digital dexterity of a spine slapper. The ad is placed by a local chiropractic office, promising "proven, effective treatment for health problems caused by accidental misalignment of the spine," providing us with yet another example of how time-honored popular fallacies, whose utter lack of validity has been demonstrated time and again, continue to thrive, even in supposedly "sophisticated," high-tech places. The spine has three principal functions, according to the late B. J. Palmer, who was head of the Palmer College of Chiropractic and son of D. D. Palmer, the "discoverer" of chiropractic. "To support the head. To support the ribs. To support the Chiropractor."

* * * * *

Some noteworthy articles from recent issues of *Fate* magazine that may have escaped your notice: "Haunts of Hell's Holler—Remote Georgia community, named for past rowdiness, is today friendly and hospitable—but the same can't be said for its ghosts" (July 1983); "Lucky Signs in Your Palm. . . . The fish is a mark of good fortune. If it points to the side, it indicates good luck all through life" (February 1984); "Do We Contact the Dead in Our Dreams? When is a dream more than a dream? When it tells us something that only the dead could know" (March 1984); "A New Way to Look Into Your Crystal Ball" (May 1984).

Fate's Associate Editor Jerome Clark has recently coauthored with Fortean writer Loren Coleman a new treatise on cryptozoology titled "Creatures of the Goblin World," which is advertised in *Fate* as "Terrifying monsters invade from out of the shadowlands! . . . hairy giants with glowing eyes, panthers and lions prowling unlikely places, huge birds on the attack, strange beings from UFOs, ghostly dogs and other bizarre beasts." Other recent writings by Clark include vituperations against "debunking extremists" who make supposedly "emotional attacks" on parapsychology and the like.

Fate's publisher, Curtis Fuller, approvingly quotes parapsychologist Dr. Brian Inglis, whose thesis is "Power Corrupts: Skepticism Corrodes. . . . It is the dangerous quality of skepticism to corrode not only those who possess it, but those who are seeking to convert them." Inglis cites one particularly corrosive example where a man could invariably move a compass needle using psi powers, until the late Christopher Evans, a CSICOP Fellow, walked into the room. This suggests an infallible solution to the supposed dilemma of the "psychic arms race": The Pentagon can store its most secret documents in a safe in the offices of CSICOP in Buffalo. All the concentrated skepticism of not only the CSICOP staff but the thousands of readers of the SKEPTICAL INQUIRER will hopelessly corrode whatever psi powers the Soviets might be able to muster.

Fuller continues by observing that "Inglis joins the increasing number of parapsychologists and other scientists who are beginning to doubt conventional scientific approaches to evidence." He sees the scientific method as a method of "diminishing returns," which perhaps might explain science's inability to deal with crystal balls, ghostly dogs, palmistry, and the other wonders that enliven the pages of Fuller's magazine.

* * * * *

If you think your stereo is really "state of the art," you might want to give it a chance to play "the most powerful cassette tape you will ever experience"—the "Outer Space Interface," being peddled by Patrick Flanagan, a leading proponent of "pyramid energy." This tape consists of "13 crystal initiates chanting 'OM,' the sacred Sanskrit word for the sound of creation." Flanagan says that it was recorded inside the king's chamber of the Great Pyramid of Giza "at the peak of the Pleiadean star alignment on the evening of November 18, 1983," whatever that means, an event he claims happens once every two thousand years. Therefore, this tape can be used to "charge your home environment with the extraordinary energy of the Great Pyramid at the time of the alignment." It's a bargain at $12.50. "OM at last," quips Flanagan.

Flanagan also charged up a number of crystals full of pyramid energy during the alignment and offered to give one free to everyone who signed up for his $145 seminar near San Francisco. These crystals "were also charged at the apex of the Pyramid in the full moonlight on the last day of this most powerful alignment." If you missed this seminar, you're simply out of luck, because these crystals "will not be available again, not for the next 2,000 years!" •

"Remember Gerald Ford? I made absolutely everything happen to him."

Haldane, *Punch* magazine

Outracing the Evidence: The Muddled 'Mind Race'

Targ and Harary's much-publicized case for the reality of psi and the validity of remote viewing is filled with exaggerated and unsupported conclusions. Their careless scholarship leads to new deceptions.

Ray Hyman

RUSSELL TARG is a physicist with patents in optics and laser physics. He also has devoted much of his adult life to research on psychic abilities. In collaboration with Harold Puthoff, in 1972 he originated the experiments on remote viewing at the Stanford Research Institute (now SRI International). He and Puthoff also gained considerable publicity for their experiments with Uri Geller. Targ and Puthoff summarized their earlier work on remote viewing and Uri Geller in their book *Mind Reach* (1977).

In many respects Targ's new book, *Mind Race: Understanding and Using Psychic Abilities,* co-authored with Keith Harary (1984), is an updated version of the earlier book.

Harary, a psychologist, is well known both as a parapsychologist and as an apparently successful percipient in parapsychological experiments. He and Targ founded Delphi Associates, an organization that sells psychic consulting services to individuals and businesses seeking advice on investments, exploration, or other important decisions.

Although Targ and Harary inform us that both the Soviet and the American defense establishments spend millions of dollars on psychical research, the "race" of the title does not refer to the competition for psychic superiority between the superpowers. Instead, as the authors put it:

Ray Hyman is a professor of psychology at the University of Oregon and chairman of CSICOP's Parapsychology Subcommittee.

> The Mind Race is a race to determine the future of your own consciousness before other forces decide that future for you. We must develop our ability to experience compassion and empathy with our fellow creatures, before we lose contact with our own humanity and exterminate one another over an ideological difference of opinion, or for some similarly foolish reason. The Mind Race is not a race between nations. Though the U.S. and Soviet governments are heavily involved in psi research, we are all in a more vital and personal race to determine whether we will be able to wake up to our deeper potential before we have exhausted the limited time available to us.
>
> As a society we are in the process of making wide-ranging decisions about our evolutionary future. This decision is in our hands right now. The quality of future life on this planet will be determined for us by others if we do not choose to participate actively in determining our own destiny. We do not believe that any psychically sensitive human being would choose to live in a future that is dominated by robots, especially if we are to be the robots. We believe that our future must include psychic functioning if we are to achieve our full potential as human beings. We call this requirement the psi imperative. [p. 246]

The stakes are high. If Targ and Harary are correct, we have to enter the Mind Race and develop our psychic powers or end up as robots subject to the manipulation of others. But what if we lack psychic abilities? Or, if we have them, how can we develop them? Not to worry. The authors assure us that we all possess such powers. Furthermore, they supply directions for developing them. "It is past time for bringing psi into the open, where everyone can benefit from a realistic awareness of it. We believe it is time for all of us to claim our right to function psychically. You own your own mind. It is important not to give it away, or fail to use it to its full potential. So get going! You have to enter the Mind Race in order to win" (p. 246).

The authors' intentions are clear. They would like each of us to follow their directions and develop our inherent psychic faculties. They imply that some form of world utopia would automatically follow once each of us has heeded their advice.

But, as they see it, obstacles prevent many of us from making this commitment. Gurus, superpsychics, and occultists frighten and mislead many of us by depicting psychic functioning as special, abnormal, or available only to the initiated. The media portray psychic powers as weird, evil, or dangerous. Organized religion views such powers as satanic in origin. And critics, for what the authors assert are ulterior religious and philosophical motives, loudly proclaim that psi does not exist. "To those who refuse to develop their psychic abilities it makes little difference whether the force that manipulates them into repressing their human potential is organized religion, cults, materialistic critics, or the mass media. The end result of such repression is the same no matter where it originates"

WIN THE MIND RACE!
Develop your psychic func
and learn how to use it.
from the Institute of No
you shouldn't refuse.
THE MIND RACE
UNDERSTANDING AND US
PSYCHIC ABILITIES
RUSSELL TARG AND KEITH
Two
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The Mind Race
475 Gate 5 Road, Suite 300
Sausalito, CA 94965
A Conversation With Keith Harary
"Almost Everyone Has Psychic Abilities"
Keith Harary, an experimental psychologist, has spent more than a decade doing research related to psychic functioning at such institutions as Duke University and SRI International. He and Russell Targ are co-authors of The Mind Race: Understanding and Using Psychic Abilities
"A lot of misunderstanding" by the public
"Much more difficult to keep secrets"
"Soviets take it very seriously"
In a psychic test, subject drew the sketch without knowing the place chosen at random was the Stanford Art Museum and related by a second person.
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73

Promotion for *The Mind Race* and interview with Harary in *U.S. News* and *World Report*

(pp. 245-246).

Targ and Harary's goals of creating a better world by helping us gain access to our psychic powers assume the truth of a number of propositions. I would list them as follows:

1. Psychic functioning, or psi, is real.

2. The reality of psi has been scientifically established beyond any reasonable doubt.

3. The individual reader can test the reality of psi by personal experience in demonstrations suggested by the authors.

4. Psi is normal. It is a natural human function and does not depend on secret or occult rites, special states of mind, or abnormal circumstances.

5. Psi is universal. It is not a special gift. We all have the potential for psychic functioning.

6. Psi can be developed through simple exercises that help to discriminate valid psychic signals from "mental noise."

7. Psi can be put to practical use in any situation where decisions must be made with inadequate information, such as gambling, investing, finding parking spaces, etc.

8. It is important that we all develop and employ our psychic powers to the fullest.

The most basic claim, of course, is that psi is real. The arguments of the book make sense only if this claim is true. This "totally convincing book" (according to the dust jacket) employs a number of different grounds to convince the reader of the existence of psychic functioning. For the scientific justification they point to the list of 28 "published formal experiments" on remote viewing that they append to the book. Even more compelling, as far as the average reader is concerned, are the authors' accounts of the many impressive qualitative descriptions of targets by viewers and the successful applications of psi to predicting silver futures and the outcome of gambling choices. Readers are also urged to follow the directions and experience their own psychic success.

The Scientific Case for Psi

Let's look first at the scientific case they present. This is supported entirely by the published experiments on remote viewing. The phrase "remote viewing" was coined by Targ and Puthoff in 1972 as a neutral term to describe the phenomenon they believed they were capturing in their experiments at the Stanford Research Institute. These experiments employed at least three participants. A viewer, or percipient (the psychic), was isolated with an experimenter (the interviewer) in the laboratory. A second experimenter (the out-bound experimenter, or "beacon") then drove to a randomly selected geographical location (the target site) within a 30-minute drive from the laboratory. While the beacon was at the target site, the viewer described his or her impressions of the scene to the interviewer, and often made drawings as well. When the trial was over, the beacon would return to the laboratory and then all the participants would visit the target site to give the viewer feedback about how well the impressions had matched the actual target.

After a series of such trials (usually 7 or 9) had been conducted with a given viewer, the descriptions and drawings made by the viewer for each session were given to a judge, who then visited each site and ranked all the descriptions from best (a low score) to worst (a high score) according to how well each matched the target. If the agreement between the viewer's description and the actual target was simply a matter of guesswork, then, for example, with 9 possible target sites we would expect to find that the average rank of the descriptions would be 5. If the descriptions were

actually related to the targets (by psi or some other means) then we would expect the rankings to be lower. In fact, this is what Targ and Harary claim the data from their own and other experiments on remote viewing have shown. In more than half the series the rankings have correlated significantly with the target sites.

Targ and Harary have no doubts that the scientific case for the reality of remote viewing has been established beyond all reasonable doubt. "In an examination of the twenty-eight formal published reports of attempted replications of remote viewing, Hansen, Schlitz, and Tart at the Institute for Parapsychology found that more than half of the papers reported successful outcomes." Part of this report is included as an appendix to the book. Hansen et al. compiled reports of remote-viewing experiments conducted during the years 1973 through 1982. They concluded: "We have found that more than half (fifteen out of twenty-eight) of the published formal experiments have been successful, where only one in twenty would be expected by chance."

To both the casual and scientifically trained reader the fact that 15 of 28 "published formal experiments have been successful" should seem rather impressive. But a more careful study of the list of experiments suggests that this data-base may not be as strong as implied.

The scientific literature in any given field consists of formal experiments published in scientific journals. Only those papers that survive a rigorous screening and revision procedure make it into print. In fact, many scientific journals reject more than half of the papers submitted to them. Rarely does a paper get published as submitted. Manuscripts are sent to two or more referees who are experts in the subject area of the manuscript. These referees advise the editor about whether the paper is of sufficient merit to be a candidate for publication. They also carefully scrutinize the manuscript for inconsistencies, unsupported claims, adequacy of the statistical analyses, unclear arguments, and so on. Typically, before a manuscript finally is accepted for publication, it has gone through several revisions as a result of this refereeing process. Such a screening process is not perfect and some defective papers do get published. But, for the most part, the process ensures that scientific reports have passed a number of tests.

Only 13, or less than half, of the "published formal experiments" meet the standards of having been published under refereed conditions. The remaining 15 were published under conditions that fall short of scientific acceptability. Some appeared as brief reports or abstracts of papers delivered at Parapsychological Association meetings or some other parapsychological conference. In addition to not having undergone the standard refereeing process, such abstracts present insufficient documentation for scientific evaluation. The same can be said for the other studies that appeared in print only as brief or informal reports in book chapters or letters to the editor.

The scientific case for remote viewing, then, rests upon 13 scientifically reported experiments, 9 of which are classified as "successful." Seven of these experiments were conducted by Targ and Puthoff. The remaining 2 came from two other laboratories. This harvest of 9 "successful" scientifically reported experiments emerging from just three different laboratories over the past 12 years hardly seems to justify the strong impression conveyed by the authors that remote-viewing studies have been successfully carried out in large numbers in laboratories all over the world. ("In laboratories across this country, and in many other nations as well, forty-six experimental series have investigated remote viewing. Twenty-three of these investigations have reported successful results and produced statistically significant data, where three would be expected" [p. 5].)

". . . Even 9 'successes' out of 13 tries would not be bad if the successful studies met reasonable standards of adequacy. But all 9 suffer crippling weaknesses."

But even 9 "successes" out of 13 tries would not be bad if the successful studies met reasonable standards of adequacy. But all 9 suffer crippling weaknesses. At least 3, and possibly more, are what I would classify as "retrospective experiments"—experiments not explicitly planned in advance but apparently reconstructed from separate trials that were originally conducted simply as demonstrations. According to Kennedy (1979a), remote-viewing experiments have employed the wrong statistical test. When Kennedy applied a more appropriate statistical test he found, for example, that only 2 of 6 experiments reported by Puthoff and Targ were significant, whereas they had concluded that 5 were significant. This alone would reduce the total number of successful remote-viewing experiments to 6. Of these 6, all but one suffer from a "fatal flaw" that I first pointed out in 1977 (Hyman 1977b) and Kennedy (1979b) independently noted two years later. The one experiment that escapes this "fatal flaw" unfortunately suffers from another serious drawback. I will discuss these flaws later in this article.

Marks and Kammann (1978) raised serious questions about the validity of the findings on the remote-viewing experiments with Pat Price (Puthoff and Targ 1976). Marks obtained copies of the five unpublished transcripts from the series with Price. He found a number of clues in the transcripts to target sites without assuming the operation of psi. For example, in one transcript the interviewer mentions the nature reserve that had

been the target for the previous day. Such a clue obviously helps the judge by informing him that the transcript in question should *not* be matched with the nature reserve. In addition, if the judge has information on the order of the target sites, it enables him to uniquely identify the transcript with its intended target. Using such clues within the transcripts Marks successfully matched each description against its intended target without actually visiting any of the sites.

Tart, Puthoff, and Targ (1980) responded to this critique with three rebuttals. Charles Tart, a parapsychologist who had not been involved in the original experiments with Price, reviewed the transcripts and removed "all phrases suggested as potential cues by Marks and Kammann" as well as "any additional phrases for which even the most remote *post hoc* cue argument could be made." The edited series was rejudged by a new and "qualified" judge who was able to successfully match seven of the nine transcripts. The parapsychologists argued that this successful rejudging refuted the "cueing-artifact hypothesis" as it applies to the Price series. Furthermore, they claimed that the hypothesis could not apply to their subsequent successful experiments because the transcripts were carefully edited to avoid such cues. Finally, they argued that the successful replication of their experiment in other laboratories confirms the reality of their psychic interpretation.

There is no need here to discuss the continuation of this controversy (Marks 1981; Puthoff and Targ 1981). Possibly this controversy as well as the critique of the statistical analysis being applied to nonindependent trials has helped to prevent the participants from realizing the full implications of the criticism raised by myself and Kennedy. Neither a more conservative test nor the editing out of obvious cues referring to previous targets can overcome the defect we have pinpointed. Once the viewer and the interviewer have been given feedback about a particular target, then *every* word and phrase in the subsequent descriptions of targets has been tainted. And it is not just the words and phrases that have been included but also those that have been excluded that create the problem.

The problem arises from the fact that the viewer is provided immediate feedback after each session. Say that the target for the first session was the Hoover Tower at Stanford. This will almost certainly influence what both the viewer and the interviewer say during the second and subsequent sessions in the same series. Almost certainly the viewer, during the second session, will not supply an exact description of the Hoover Tower. So, whatever the viewer says during the second session, a judge should find it to be a closer match to the second target site than to the first one. Now, assume that the second target site happened to be the Palo Alto train station. The viewer's descriptions during the third session will avoid describing either the Hoover Tower or the Palo Alto train station. We do not need to hypothesize something as mysterious as psi to predict that a

judge should find this third description a better match to the third target site than either of the first two. As we add sessions, this effect of immediate feedback should continue to make the correlation between the viewer's descriptions and the target sites better and better.

". . . Not one of the several skeptics who have seriously attempted to replicate the remote-viewing experiment has succeeded."

Every experiment that has followed the original SRI protocols with immediate feedback is irrevocably flawed because there is no way of separating out a true psychic signal from the information in the transcripts provided by the fact that the viewer knows the previous target sites. So far as I can tell, only one of the nine "successful" experiments does not contain this fatal error.

This experiment (Schlitz and Gruber 1981) suffers from its own serious problems. Gruber, who was the beacon, also translated the viewer's target descriptions into Italian for the judging process. The translator knew which description went with a given target. With almost an infinite number of choices to be made in translating a description from English to Italian, and with the translator's task of trying to capture in the new language what the viewer "meant," it would seem inevitable that translations by the beacon would match the intended target sites. As just one example, assume that, as a part of her description, the viewer had mentioned "wood." One can translate the English word "wood" into Italian in a number of ways depending upon whether the translator believed the wood in question referred to the trunks of trees, the logs, the finished boards, the wood in furniture, or some other form of wood. If, in this case, the actual target site was a forest, then it seems reasonable that the translator would be strongly influenced to translate the English description to fit this known feature of the target. Given this blatant violation of controls, skeptics should not be surprised to learn that this experiment yielded the highest degree of significance of any remote-viewing experiment.

The foregoing considerations should make it clear that the scientific case for remote viewing rests on very shaky foundations. Further problems could be mentioned. For example, not one of the several skeptics who have seriously attempted to replicate the remote-viewing experiment has succeeded. I even know of two cases, neither yet published, in which a skeptic and a parapsychologist collaborated on a remote-viewing experiment with negative results.

Many problems involve inadequate documentation. In the early years of science, the ideal of a scientific paper was a report that was sufficiently complete so that any competent reader could both fully evaluate the results and repeat the experiment. The same ideal holds today, but with journal space costly and limited some practical compromises have to be made. Not all the data or complicated details of procedure can be included, but to the extent this is so the scientific community understands that the omitted details and data are publicly available and the authors are obligated, within the constraints of expense and practicality, to make them available to serious readers. A hallmark of scientific research is this public availability of the data for scrutiny by all interested parties.

The problem of public availability of the data is especially critical in the case of remote viewing. The raw data upon which the scientific case is built consists of the protocols or individual descriptions of targets provided by the viewers. It would take up a prohibitive amount of journal space to publish the complete set of transcripts from an experiment that consists of the typical nine or so trials. Without access to the original transcripts, the reader gets to read only those one or two exceptional transcripts selected by the authors. And, for the most part, only excerpts from the chosen transcripts are supplied.

"The reader gets to read only those one or two exceptional transcripts selected by the authors. And . . . only excerpts."

The scientific public would never have been aware of the cues available in the Price transcripts if David Marks, overcoming strong resistance from Targ and Puthoff, had not obtained the original data. Because of the controversy that had arisen about those transcripts, Dr. Christopher Scott, an English mathematician and former parapsychologist, requested that Puthoff and Targ send him copies of the transcripts to signal to the scientific community that, in fact, these data were available for public inspection by responsible and qualified scientists. When his initial written inquiries failed to result in his getting the transcripts, Dr. Scott publicly repeated his request to Targ and Puthoff at the Parapsychological Association meeting in Cambridge, England, in August 1982. Puthoff admitted that Scott was entitled to inspect the transcripts and indicated that he would make them available for this purpose. Dr. Scott happened to be visiting California in the spring of 1983. Since, despite further requests, he still had not received copies of the transcripts, he made a special trip to

SRI International to put his request to Puthoff directly. Unfortunately, Puthoff could not meet with Scott because of an illness in his family, but none of his associates would allow Scott to see the transcripts. Scott has persisted in his quest to see the data, but Puthoff and Targ, two years after they promised to make them available, still prevent public scrutiny.

Targ and Harary depict their critics as unreasonable dogmatists. They put all the blame for the failure of their work to gain scientific acceptance upon the religious fanaticism of blind materialists. Tragically, Targ does not realize how much of the blame must be attributed to his own unscientific behavior. By allowing only a small band of select initiates to inspect their raw data, Targ and Puthoff appear more like the leaders of an occult society who jealously guard their secrets rather than scientists who try to make their case in the public arena.

I do not have to develop my psychic powers to anticipate Targ and Harary's next reaction to the preceding critique. They preview their rebuttal, among other places, on pages 174 and 175 of *Mind Race*. Here they describe their reactions upon listening to the critics at the meeting of the Society for Psychical Research and the Parapsychological Association in August 1982:

> One question was repeatedly asked at this centenary conference: What has been accomplished in a hundred years of research? An answer that most of the scientists in the field would support is that as a result of thousands of laboratory experiments, comprising millions of trials, any fair-minded man or woman should be convinced beyond reasonable doubt that psi exists, and might possibly even be important. But many people at the conference did not share that view. Some were critics, and some were psi researchers. . . . It became clear from listening to these critics that any experiment, no matter how carefully carried out, may reveal a flaw in retrospect. There is always something that could have been done better. *This is true in every field of science*—and in recent years there have been many more examples of fraud in medical research than in psi research.
>
> Hearing what the critics have to say, we began to realize that psi may never be accepted into the mainstream of science on the basis of laboratory experimentation alone.

Like many other things the authors have to say, one can find circumstances and contexts in which the foregoing remarks apply. Some critics do fit this description. And not one will deny that after the fact we can always find in any experiment a defect or subtle variable that was overlooked. But the authors have again used an excuse that makes sense in some other context to avoid dealing with legitimate criticism.

The "critics" who gave papers at the 1982 conference were Chris Scott, Susan Blackmore, Piet Hein Hoebens, and myself. Scott is a former parapsychologist who has become a critic, but he is recognized by para-

psychologists and others as scrupulously fair. He maintains good relations with psychic researchers and has written extensively for their journals. Susan Blackmore is a practicing parapsychologist. She has become skeptical of many claims in her field as a result of a decade of research in which she has failed to replicate many of the major findings. She remains in the field because she feels parapsychology badly needs friendly and constructive critics. Hoebens is a Dutch journalist who has gained an international reputation as a skeptic who leans over backwards to give the parapsychologists a fair hearing. All of us on the panel had agreed ahead of time that our task was to provide constructive and responsible criticism.

> *"Targ and Puthoff appear more like the leaders of an occult society who jealously guard their secrets than like scientists. . . ."*

The flaws I have attributed to remote-viewing experiments in this article are definitely not flaws that are found retrospectively as new and better experiments emerge. They are the very same flaws I wrote about seven years ago (Hyman 1977). Kennedy (1979a, 1979b), a parapsychologist, complained about these same flaws along with others. Unfortunately, Targ and Puthoff, in their haste to dismiss any criticism as having ulterior motives, have kept repeating the same mistakes. Other researchers in remote-viewing slavishly followed their example. The tragic result is seven more years of wasted research.

The Nonscientific Case for Psi

The bottom line is that there is no scientifically convincing case for remote viewing. As the preceding quotations indicate, Targ and Harary, while insisting the scientific case for remote viewing is overwhelmingly strong, concede that they have little hope of convincing critics and the scientific establishment with such data. Consequently, the authors employ two other modes of argument to persuade the reader that psi is real. They supply many qualitative and compelling accounts of psychic successes, and they urge their readers to try experiencing psi for themselves.

Many of the qualitative accounts illustrate striking correspondences between portions of a transcript and the actual target during a remote-viewing session. In one example, the target was the Palo Alto Airport tower. The verbatim transcript and drawing made by the viewer, Hella Hammid, indeed seem to match the target well beyond any forced match-

ing that one usually can achieve between a scenic description and a reasonably complex geographic site. But this particular session occurred after three preceding unsuccessful sessions. A skeptic might want to study all the transcripts in this series before jumping to conclusions about possible psychic correspondence.

This particular transcript obviously has been selected from hundreds available to the authors. Presumably it is presented in its entirety just because it appears to be a striking match. The authors present a number of other apparently striking matches between description and target, but in most of these cases only selected portions of the transcript are given. Again, the skeptic would want to study the entire transcript as well as all the other transcripts in the series.

"This tendency to find meaningful and compelling matches between verbal descriptions and arbitrary targets is quite pervasive. It helps account . . . for the success of character-readers and astrologers."

Marks and Kammann (1980) employ the phrase "subjective validation" to label the subjectively compelling matches that viewers and judges discovered in their remote-viewing experiments. When they initiated their series of experiments in an attempt to replicate the remote-viewing experiments, Marks and Kammann first thought remote viewing was, in fact, occurring. Both they and their viewer, after getting the immediate feedback from the visits to the target sites, found amazing correspondences between the viewer's descriptions and the target. When the judging began, the judges also found amazing correspondences between the transcripts and the targets to which they matched them. Unfortunately, the judges' matchings of targets to transcripts did not correspond with the factual pairings in the experiment. Even when told of this, the viewers did not change their belief in the success of their remote viewing.

This tendency to find meaningful and compelling matches between verbal descriptions and arbitrary targets is quite pervasive. It helps account, for example, for the success of character readers and astrologers (Hyman 1977a). Furthermore, once an individual has found such a match, it is difficult to dissuade him or her from believing in the accidental nature of the correspondence (Nisbett and Ross 1980).

For such reasons as these, striking and "meaningful" correspondences

between target and descriptions cannot be accepted as scientific evidence. This is why the elaborate blind-judging and complicated statistical methodologies have been devised. The scientific enterprise aims at separating out true correlations from subjectively compelling, but spurious, ones.

Unfortunately, the lay reader as well as the uncritical scientist will more likely be swayed by the colorful and vivid qualitative illustrations than they will by the abstract and quantitative scientific arguments. Nisbett and Ross (1980) cite abundant evidence to this effect. So we can anticipate that Targ and Harary will succeed in their tactic of bypassing the scientific case in favor of nonscientific arguments. They will succeed, that is, if their goal is to gain the adherence of their readers to their claims rather than to arrive at the truth.

Targ and Harary also describe successful applications of psi. An interesting example is the successful use of remote viewing by Elisabeth Targ to predict the winner of the sixth race at Bay Meadows. She picked a horse named Shamgo, and students from all over her college dormitory contributed to a betting pool. Shamgo won and paid six to one. As in other such accounts in this book, we are not told if this was Elisabeth's first attempt at predicting races or if she ever tried it again. Targ and Harary also retell the story of their venture into psychically predicting the silver-futures market. They claim to have correctly predicted both the magnitude and the direction of the change in all nine forecasts they made in the fall of 1982. Again they fail to tell us about any preceding or future forecasts (although on NOVA's program on ESP, the narrator casually mentioned that Targ and Harary's later attempt to repeat this feat failed).

The Proof of the Pudding Is Not in the Eating

Psychologists also will not be surprised if the readers who follow the authors' recipes for developing their own psychic powers become believers in the reality of psi. The authors write that readers can test the reality of psi for themselves. They supply general guidelines to follow to develop latent psychic abilities. The basic idea makes some sense in terms of general learning principles. If we accept their argument, then at any point in time our conscious experience consists of sensory impressions, memories, and inferences. In addition, some of this content may be impressions that have arrived psychically. If the viewer attempts to describe the psychic impression, the description is often contaminated and transformed by the viewer's expectations, memories, and current sensory impressions. The authors refer to this contamination as "mental noise." Developing one's psychic abilities involves learning to discriminate true psychic signals from "mental noise." This can be achieved, according to the authors' optimistic projections, by indulging in exercises in which immediate feedback supplies

us clues as to which of our impressions were truly psychic and which were mental noise.

One exercise involves finding a parking place. Readers are urged to visualize a certain area of the city in which they want to find a parking place. When they get some sort of impression of a possibility, they drive to that spot. If the spot is occupied, they try again. They are to keep this up until they either find a parking spot or run out of gas. By repeatedly trying this exercise the learner, allegedly, can gradually improve the ability to discriminate between those impressions that work and those that do not. Exercises in playing black-jack, doing remote-viewing, anticipating traffic jams, and so on, are similar.

Targ and Harary confidently put forth such exercises as a way for the readers to find the truth for themselves. But we do not have to postulate psi to predict many of those who try such exercises will end up believing they are experiencing psi. For a sampling of just some of the enormous amount of psychological evidence for this expectation see Nisbett and Ross (1980). The authors do not bother to warn their readers of the traps that await them. Instead of forearming the readers, they *disarm* them. Consequently, instead of a path to the truth, they supply a recipe for self-deception.

Several things are wrong with such exercises. For one thing, one of them can succeed for reasons unrelated to psi. Indeed, the authors talk about developing intuition as if it is the same thing as psychic functioning. Some learners might actually improve their ability to find parking places. In some shopping areas the southern boundary, for example, might tend to have more unoccupied spaces than the other sections (because of prevailing traffic patterns). As learners practice trying to home in psychically on a parking space, they may gradually learn to follow impressions that lead them to the southern boundary. Such learning could take place without any conscious awareness on the learner's part. Very likely, the learner will attribute this increasing success to developing psychic powers. Other unconscious cues, such as hearing a motor start up as an auto vacates a parking place, could also become part of what the learner comes to rely upon as psychic abilities.

But even without any actual learning taking place, several psychological mechanisms can easily contribute to the illusion that psychic abilities are gradually leading to more and more successful outcomes. These are well-known distortions of memory, thinking, and other cognitive processes. And it is dismaying, especially when one of the authors claims to be an experimental psychologist, that Targ and Harary do nothing to protect the reader from such powerful pitfalls.

Furthermore, Targ and Harary provide no evidence that learning to discriminate psychic signals from "mental noise" according to their directions can actually occur. They refer vaguely to their experience with

remote-viewing sessions. But they fail to hint at even one scientific experiment that suggests that such learning can take place.

Additional Problems

So far I have noted some serious weaknesses in the arguments for the propositions being asserted in *Mind Race.* My notes suggest a variety of other difficulties, but it would only make a long article much longer to try to list them all. In this section I want just to point to a few inconsistencies in the arguments of the book.

The key to developing psychic abilities, according to the authors, is learning to discriminate "mental noise" from true psi impressions. The authors repeatedly assert that their viewers become better and better at this with practice. Harary gives examples from his own experience as a viewer where he was actually able to indicate to the judge which of his statements were "mental noise."

Such a claim would seem simple to test, but the authors supply nothing but a few qualitative observations to back up their assertion. As a standard procedure, for example, each viewer, immediately after each trial, could review the transcript and indicate which statements are "mental noise" and which are true impressions. The experimenter could easily quantify such data and see whether the proportion of correctly identified statements increases with practice.

Furthermore, even if their claim is only partially true, it allows for an excellent control for the judging procedure. Each transcript could be divided into two transcripts—one part containing all the items identified by the viewer as "mental noise" and one part containing the items identified as true impressions. The judges should show high accuracy in matching the second transcripts and should be at chance in matching the first.

Nor do the authors face up to another inconsistency raised by their

claim. It is the practice in remote-viewing experiments of employing independent judges to gauge the correspondence between target and description. The researchers who use this paradigm claim that they cannot get adequate results if they employ the viewers as judges because of "mental noise" that interferes with their seeing the correspondences. One inconsistency is that in the Ganzfeld experiments, which started at the same time as the remote-viewing paradigm, the reverse seems to be the case. In those experiments, the percipients are used to judge the correspondence of their own descriptions against the targets. This is done because apparently the results from independent judges do not work as well. Despite this odd reversal, the claims for success in the Ganzfeld experiments equal those for the remote-viewing experiments.

"On almost every page [Targ and Harary] make assertions based on inadequate or nonexistent evidence."

A second inconsistency is that, if in fact the viewer is learning to discriminate true psi signals from "mental noise," then the viewer should be a better judge than an outsider. The independent judge, after all, has to deal with the entire transcript and has no way of gauging which statements should be ignored in trying to match transcript with target.

The claims for gambling successes employing psi also hint at a variety of inconsistencies. Millions of gamblers over the years have presumably employed hunches and intuition in making their bets. They have gained enormous amounts of immediate feedback that should have taught them, according to the theory advanced in this book, which of their impressions should be trustworthy and which should be ignored. Even if such learning is only partial and even if it occurs in only some of the gamblers, it should raise the odds in favor of the players by some percentage. Yet the gambling industry rests on the assumption that odds that are only slightly (one or two percentage points) in their favor along with other restrictions upon the betting will ensure them against serious losses. If Targ and Harary are correct, the casinos in Las Vegas, Reno, Monte Carlo, Atlantic City, and elsewhere should have long ago gone bankrupt.

A third inconsistency arises from evolutionary theory. Targ and Harary assert not only that we all have latent psychic abilities that can easily be developed but that we *must* develop them if we are to realize our human potential and escape becoming robots. This first of all raises the question of the evolutionary forces that allowed such a capacity to develop and yet remain unused. Presumably, it must have had some survival value

to have developed in the first place. But, then, we have to ask why it is now latent and needs special exercises to develop.

I can imagine possible answers to these inconsistencies, but it is strange that the authors have felt no obligation to deal with them.

Going Beyond the Data

In his review of Targ's earlier book *Mind Reach,* Robert Ornstein (1977) wrote:

> Throughout the book the authors state their hope that the study of parapsychology will become primarily a scientific one in which speculations are firmly grounded in the evidence. In their own writing, however, Targ and Puthoff almost always go beyond evidence and claim they have proven their case when they have done nothing of the sort. In writing this book, the authors have done more harm, perhaps, to their own position and to their field of study than they have helped.

These words apply with equal force to the current book. Targ and Harary's most conspicuous faults are hasty generalizations and overstated claims. On almost every page they make assertions based on inadequate or nonexistent evidence. I have already given samples in the preceding sections. But to back up my own assertion, I will list a sample of some of the more blatant cases:

1. As already documented, the authors overstate greatly the strength of the scientific support for remote viewing. They strongly imply that 15 of 28 "formal published experiments" from laboratories all over the world were successful. But, if we deal with papers actually published under accepted scientific standards, only 9 "successes" can be counted. Of these, 7 were conducted by Targ and Puthoff and only 2 come from other laboratories. All but one of these "successful" experiments suffer a fatal flaw that I pointed out in 1977, as did Kennedy in 1979.

2. On the basis of just two remote-viewing trials conducted with the viewers in a submarine, Targ and Harary conclude that ocean water provides no barrier to the psi signal and that remote viewing is unaffected by seasickness. There is just no way such a conclusion can be drawn on the basis of just two data points. Even if the authors want to claim that remote viewing took place under these circumstances, they would need many more data points collected under the underwater conditions before they could say that no difference existed between this and land conditions.

3. Targ and Harary admit that they do not know if evil psychics can implant harmful thoughts in other people, but they do not hesitate to suggest steps that the readers can employ for "psychic self-defense." If we do not know if the disease exists, how in the world can we know if the

cure will work or even if it may cause harmful side-effects?

4. As already indicated, the authors provide elaborate instructions for developing psi but cite not one piece of scientific evidence that suggests that such instruction works.

5. Targ and Harary freely accuse critics of fraud on the basis of undocumented or unsubstantiated allegations. They try to smear Martin Gardner by writing that he

> criticized the NASA-supported ESP-teaching-machine study carried out at SRI in 1974. He falsely alleged that the subjects in this experiment tore up their unsuccessful data tapes, and only handed in the successful ones. He said in his article, "I am not guessing when I say that the paper tape records from Phase I were handed in to Targ in bits and pieces." We now know the reason he could say that he "wasn't guessing." This is because he recently confided to a fellow reporter that he had just made it up, "because that's the way it must have happened." The reporter was so shocked at this disclosure, that even though he is not particularly sympathetic to our work, he felt compelled to call up the SRI researchers to pass on this remarkable piece of news. [p. 157]

On its face this vicious slander does not stand up. First, it is based entirely on an undocumented statement by an unnamed reporter. Second, it just does not make sense for a journalist whose profession is based on the integrity of its members to make such an obviously damaging admission. When I read it, I could tell it was completely false, not only because I know Martin Gardner but also because I am familiar with the circumstances of his having made the claim about the tapes. He felt he could make this statement with confidence because he was given the information by an informant whom he has every reason to trust. To further compound the damage of this slanderous accusation, it was published in *Fate* magazine as the "Quote-of-the-Month." The "fellow reporter" to whom Martin Gardner supposedly confided that he had deliberately lied about the ESP-teaching-machine experiment turns out to be Ron McRae, the author of the recently published book *Mind Wars*. McRae has written to *Fate* magazine that he never made such a statement to Targ or anyone else. Instead, he did happen to mention to Hal Puthoff, who was then Targ's colleague at SRI, that he had overheard another individual make such a claim but did not consider it reliable. As a result of McRae's letter to *Fate*, that magazine published an apology and retraction in its October issue.

Targ and Harary continue this reckless abandon by asserting that CSICOP "was recently caught conspiring to deceive the public about some research results that did not fit their expectations." They go on to say that Randi and the rest of the CSICOP members "were exposed when a member of their group defected and offered documented proof of the deception. . . . It is clear that the goal of the psi-cops is to *control your ability to*

access and interpret information and to walk a beat in your mind" (pp. 157-158). The "documented proof" presumably refers to the charges made by Dennis Rawlins in his long attack upon three members of CSICOP published in *Fate* magazine. The incident refers to a controversy over the interpretation of data from a study by Michel Gauquelin. In cooperation with Gauquelin, three skeptics reanalyzed the original data and published an interpretation that was challenged not only by Gauquelin, but also, on certain obscure technical grounds, by Rawlins. All this was initiated before CSICOP was founded, and the project was never sponsored by the Committee. Randi, whom the authors obviously want to paint black, had nothing to do with the Gauquelin study. In addition, the debate involved complicated and subtle matters of how to interpret trends in the data, and no conspiracy to deceive or any other evils that Targ and Harary so carelessly invent were ever implicated.

6. The authors freely question the motives of those critics who disagree with them. "Some of these critics have ulterior motives for not wanting the public or the academic community to take normal psychic functioning seriously. In that, they are like anyone else who hopes to profit by misleading the public about psychic abilities. Critics, like cultists, can sometimes live off the controversy they generate. For example, one critic, now famous, was a minor entertainer until he began a nationwide crusade against psi research" (p. 156).

The "critic" they are talking about in the last sentence of the quotation is Randi, the magician. Randi was an established and well-known entertainer long before his attacks on Uri Geller. He is probably the best-known escape artist since Harry Houdini. It would be difficult to measure whether he profited or lost either professionally or financially from the publicity emerging from his critiques of psychical research. I know that he often gives up profitable engagements to attend conferences and give talks on his views of contemporary paranormal claims. From my personal acquaintance with Randi, I have little doubt that his motivations involve a love of his craft and a desire to prevent conjuring from being used to exploit scientists and the public. Motivations are of course complicated and elusive. I have been a critic of paranormal claims for at least 35 years. I am sure that my motivations have changed drastically over that period of time. And they are complex. Even today I would have a difficult time trying to give a full account of why I put so much time into it. But the complexities and multidimensionality of motivations do not deter Targ and Harary. Unencumbered by facts or proof, they freely and confidently assert which motivations guide the behavior of their critics.

If the critics were fair and honest, Targ and Harary believe, they would carefully scrutinize the parapsychological data and conclude that psi has been proved. But the critics, without having seriously examined the data, freely criticize the claims. This means, according to the authors, that

they have ulterior motives for not wanting psi to be true and for keeping the public from believing. In the same breath, Targ and Harary acknowledge that some critics, both within and outside the field of psychical research, have examined the data and still debate the claims for psi. No matter. They say that these critics, too, have religious and philosophical motives and deliberately distort the facts so as to mislead the public.

These seem to be the kinds of rationalizations that enable the authors to cope with the fact that many critics deny that the case for psi has been proved. This rationalization seems to provide a protective shell. It keeps Targ and Harary from facing the reality that the case for psi is much shakier than they would like to believe.

". . . Their book does a disservice to the attempts of other parapsychologists to make their field into a respectable and serious branch of science."

In many ways their book does a disservice to the attempts of other parapsychologists to make their field into a respectable and serious branch of science. The authors boldly assert that the accumulated data are sound, consistent, and scientifically impeccable. Only prejudice and ignorance prevents the scientific establishment from recognizing this fact. They fail to realize that the parapsycholgists have much work to do in order to get their house in order before they are ready to withstand the scrutiny of serious scientists.

Some major parapsychologists, fortunately, do recognize this problem. John Beloff (1976), a past president of the Parapsychological Association, told his colleagues: "I think that one thing we have got to recognize is that our field is so much more erratic, anarchic and basically subversive than we like to admit when we are engaged in our public-relations exercises. . . ." And Martin Johnson (1976), who holds the Chair of Parapsychology at the University of Utrecht, wrote: "I must confess that I have some difficulties in understanding the logic of some parapsycholgists when they proclaim the standpoint that findings within our field have wide-ranging consequences for science in general, and especially for our world picture. It is often implied that the research findings within our field constitute a death blow to materialism. I am puzzled by this claim, since I thought that few people were really so unsophisticated as to mistake our concepts for reality. . . . I believe that we should not make extravagant and, as I see it, unwarranted claims about the wide-ranging consequences of our scattered, undigested, indeed rather 'soft' facts, if we can speak at all about facts

within our field. I firmly believe that wide-ranging interpretations based on such scanty data tend to give us, and with some justification, a bad reputation among our colleagues within the more established fields of science."

Without a doubt, Targ and Harary's careless scholarship will contribute to the "bad reputation" that parapsychology still has among many established scientists. Perhaps it is equally unfortunate that this book may very well achieve the opposite of what the authors intend. They hope to demystify psychic functioning, put their readers in touch with themselves and the world, and to free them from false beliefs. Instead they have set the stage for new mystifications and self-deception.

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Sonar and Photographic Searches for the Loch Ness Monster: A Reassessment

Seven weeks of continuous sonar monitoring found no sign of any large creature. Re-evaluation of sonar and photographic methods used by previous expeditions found them inadequate. Some blatant discrepancies were discovered, especially in the famous "flipper" photographs.

Rikki Razdan and Alan Kielar

THE EXISTENCE of a Loch Ness monster has long been the subject of speculation. In recent years, mainly as a result of sonar work carried out by Robert Rines and co-workers [1-4], the phenomenon has gained sufficient scientific credibility that a zoological classification has been ascribed to the creature [5].

Alleged scientific evidence for the existence of a Loch Ness monster dates back to as early as 1960. Copious amounts of data have been generated through expeditions conducted by Cambridge [6] and Birmingham [7] universities, the Loch Ness Investigation Bureau [8], the Loch Ness and Morar Project [9], and the Academy of Applied Science [1-4].

A thorough evaluation of this data led us to question its validity. In many instances, the findings were distorted by significant procedural and quantitative errors. We present evidence here on a case-by-case basis that conflicts with the findings of these researchers and renders inconclusive claims for the existence of the Loch Ness monster.

The questionable accuracy of this previous data coupled with our

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longstanding interest in the Loch Ness legend prompted us to initiate our own expedition to Loch Ness in May 1983. We designed a tracking sonar array specifically for this purpose at our laboratory in Rochester, New York. This expedition had the advantage of being able to image in three dimensions and obtain an actual tissue sample from any large underwater creature coming within range of our 25-meter × 25-meter array. The karyotype analysis of a tissue sample would provide conclusive evidence of the existence of some unique creature, in contrast to ambiguous sonar traces and photographs presented by previous researchers.

The 15-ton sonar apparatus, which can scan a depth of 33 meters, was tested during the summer of 1982 at Conesus Lake in New York State and was then shipped to Temple Pier, Drumnadrochit on Urquhart Bay at Loch Ness. The array consisted of 144 sonar transducers, arranged in a 12 × 12 grid. It imaged the area under which it floated by measuring the water depth directly beneath the individual sonar transducers. These depths were displayed on a television monitor as color-coded blocks arranged in a 12 × 12 grid pattern corresponding to the placement of the transducers. Any sonar target over 3 meters in length moving under the grid triggered an alarm, and the target was automatically tracked in three dimensions. Schools of fish were automatically recognized and ignored by the tracking electronics based on an analysis of the return echoes from each sonar transducer. Nine underwater dart guns with retrievable biopsy tips were mounted on the array and could be automatically fired upon detection of an intruder beneath. If a tissue sample were obtained from a large target, arrangements had been made for its analysis at the Zoology Department of Glasgow University. The sonar transducers [10] were encased in rubber flotation collars and were separated from one another by 2-meter-long aluminum cross-pieces.

The array, tethered to shore by a 330-meter control cable and floating in approximately 65 meters of water, was moored adjacent to the raft used by the Academy of Applied Science (AAS) expedition in 1976 [11]. The array was powered by 12 volts of direct current (DC) to avoid the possibility that alternating current (AC) might frighten away marine life. All sonar information was automatically recorded on videotape. The equipment, except for the biopsy darts, was tested with a scuba diver and air-filled calibration targets and functioned as designed. The biopsy darts were capable of reaching a depth of 33 meters. By July 25, 1983, the array was fully functional and ran continuously until September 16, 1983. During that time it recorded nothing larger than a 1-meter fish. We are aware that our stationary array could monitor only a very small area of the Loch, but this area was one that had produced the most compelling evidence to date [1-4].

Our working on the project beside the loch for four and a half months established our credibility with the local residents. They were

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Kielar and Razdan at Loch Ness with their sonar array.

familiar with previous investigators and their work, particularly that of the AAS. The AAS's investigations had been the most ambitious and their results the most dramatic. Our conversations with these residents uncovered background material that contrasted with the published circumstances under which the Academy's results, especially the well-known flipper photographs [1], were obtained. We continued to review previously published sonar work carried out at Loch Ness and investigated its original sources at the Inverness Library and the Loch Ness Centre in Drumnadrochit. Our findings place much of this seemingly credible data into a more proper perspective.

Sonar Searches at Loch Ness

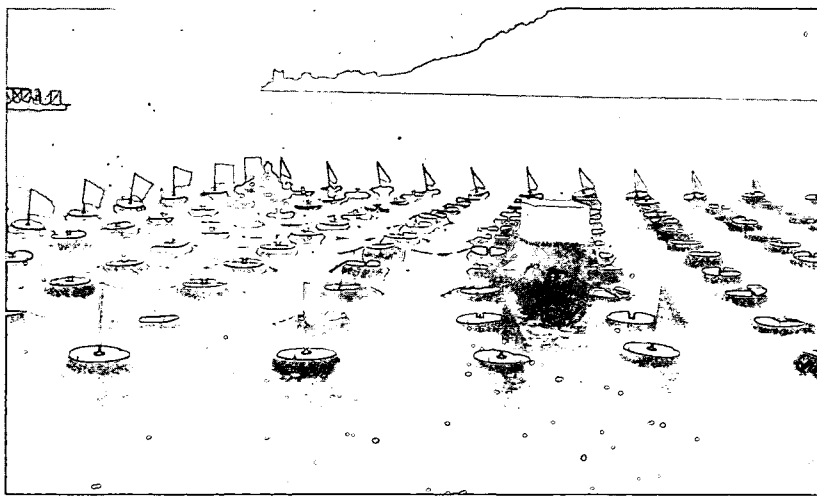
The first organized sonar searches of Loch Ness, using echo sounding and dredging equipment, were conducted by Cambridge and Birmingham universities between 1960 and 1962. Several authors [12] have reported that this investigation produced evidence of a Loch Ness monster. However, the actual reports [6, 7] indicate a general scarcity of animal life in the loch and state that no unexplained objects were encountered in either the echo sounding or the dredging operations.

In 1968 Braithwaite and Tucker [13], from the University of Birming-

ham, deployed an experimental digital sonar system off Temple Pier. The system ran continuously for a two-week period and produced a 13-minute sequence showing targets rising vertically underwater, with velocities exceeding those of known fish. We found that Tucker, after continued on-site experimentation through 1970, attributed those earlier sonar contacts to gas bubbles and thermal effects encountered over the long range (1.2 kilometers) of their sonar beam [14].

In 1969, under the auspices of the Loch Ness Investigation Bureau (LNIB), Robert Love conducted extensive channel-wall and bottom-echo soundings in the loch [8]. These narrow-beam soundings gave no indication of underwater caverns or overhanging ledges in the loch walls. His transverse sonar running across the loch denoted a general wall slope of 45 degrees, leading to a fairly uniform bottom depth of 200 to 230 meters. Love also conducted midwater patrols with a sector-scanning sonar, making only one documented contact with a large and seemingly inanimate object. Although he admitted that the target's vertical movement could not be assessed, he claimed that the target exhibited horizontal movement of an unusual, hence animate, nature. However, our analysis of his published data [15] revealed that inconsistencies in the correlation of his boat's speed with the distance he covered during the fixed observation time of the phenomenon, coupled with ambiguous ship's head information, suggest he may have been tracking a fixed underwater target, possibly debris from past expeditions [16]. In addition, the 15-degree width of Love's sonar beam at the target's maximum range of 480 meters is a significant proportion of the target's calculated horizontal movement.

During the summer of 1969 the Vickers submarine *Pisces* was intro-



Sonar array designed and used by the authors at Loch Ness.

ham, deployed an experimental digital sonar system off Temple Pier. The system ran continuously for a two-week period and produced a 13-minute sequence showing targets rising vertically underwater, with velocities exceeding those of known fish. We found that Tucker, after continued on-site experimentation through 1970, attributed those earlier sonar contacts to gas bubbles and thermal effects encountered over the long range (1.2 kilometers) of their sonar beam [14].

In 1969, under the auspices of the Loch Ness Investigation Bureau (LNIB), Robert Love conducted extensive channel-wall and bottom-echo soundings in the loch [8]. These narrow-beam soundings gave no indication of underwater caverns or overhanging ledges in the loch walls. His transverse sonar running across the loch denoted a general wall slope of 45 degrees, leading to a fairly uniform bottom depth of 200 to 230 meters. Love also conducted midwater patrols with a sector-scanning sonar, making *only one documented contact with a large and seemingly inanimate object.* Although he admitted that the target's vertical movement could not be assessed, he claimed that the target exhibited horizontal movement of an unusual, hence animate, nature. However, our analysis of his published data [15] revealed that inconsistencies in the correlation of his boat's speed with the distance he covered during the fixed observation time of the phenomenon, coupled with ambiguous ship's head information, suggest he may have been tracking a fixed underwater target, possibly debris from past expeditions [16]. In addition, the 15-degree width of Love's sonar beam at the target's maximum range of 480 meters is a significant proportion of the target's calculated horizontal movement.

During the summer of 1969 the Vickers submarine *Pisces* was intro-

Sonar array designed and used by the authors at Loch Ness.

duced into the loch. It has been credited with obtaining a depth reading of 320 meters off Urquhart Castle. We discovered that this reading was actually made with a depth sounder from a boat on the surface [17], presumably over the submarine. The area of the loch in question has been crisscrossed many times since 1969, and no depths greater than 250 meters have been reported [9].

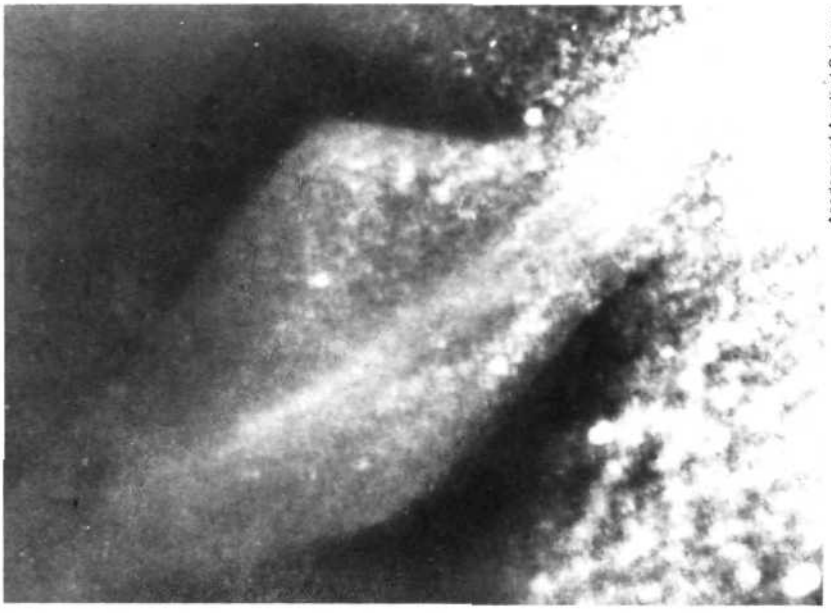
The most recent sonar data to come from Loch Ness are contacts made by Shine during the summer of 1982 [9]. Although the sonar traces show apparently strong midwater targets, none of Shine's contacts conclusively demonstrate any horizontal or vertical movement. As with Love, we deduce that he probably obtained sonar echoes from stationary midwater debris.

The AAS Investigation and the Flipper Photographs

The most ambitious investigation of Loch Ness was undertaken over a period of eight years, beginning in 1970, by the Academy of Applied Science, Belmont, Massachusetts, headed by Rines. In 1970 the results of a three-day side-scan sonar test by his colleague Klein indicated that there were large moving objects in the loch and that there are large ridges or caves in the steep walls of the loch and that could conceivably harbor large creatures [18]. These findings, published in 1976 [2], were regarded as important discoveries. Our study of a 1972 Academy publication revealed that Klein had interpreted the 1970 large moving sonar targets as "probably from three large fish" [19] and emphasized the necessity of probing the areas that appeared to be caves or overhangs with "a narrow conical beam sonar, to look straight in at the walls to determine the actual depth of these undercuts" [18].

In 1971 the Academy conducted "copious sonar profiles" [20] of Urquhart Bay. These profiles indicated the presence of significant underwater mounds and channels, and Rines spent considerable time correlating eyewitness surface sightings of the monster with these unusual topographical features [21]. He speculated that "it is along these deep ravines, in parts several hundred feet deep, that large creatures could frolic . . . without ever rippling the surface" [22]. In fact, we found that no sonar studies conducted prior to, or after, the Academy's survey show anything but a fairly steep slope down to a flat bottom [8, 9].

A paper entitled "Sonar Eyes Unmask Urquhart Bay" [4] contains the following statement by Rines: "In the summer of 1971, the Academy of Applied Science (AAS) team, in the company of local residents (former RAF wing commander Basil Carey and his wife Winifred), viewed and tried to photograph in the dusk, over a five minute interval, 20 feet of slowly moving black hump protruding at least five feet out of the calm waters of Urquhart Bay before submerging" [23]. On August 4, 1983,



Academy of Applied Science

The famous flipper photo, supposedly enhanced by a computer at the Jet Propulsion Laboratory.

Academy of Applied Science

The actual JPL computer-enhanced photo.

along with Ivor Newby and Dennis Vann [24], we talked to Mrs. Carey [25] about that evening in 1971. Mrs. Carey demonstrated for us how, on the evening of June 23, 1971, with Rines present, she dowsed [26] for the monster using a dowsing stick, a map, a pendulum, and a nonmagnetic pencil. She claimed that the point on the surface of the loch where Rines reported sighting the monster was the very one she had predicted to him, and she gave us a map on which she had recorded her 16 monster sightings since 1917, including the one made that evening with the AAS team—composed of only "Bob and Carol Rines" [27]. Asked if she could describe her impressions of the sighting that summer night in 1971, she said: "It was a dark evening. It could have been anything."

Also in 1971, Rines described the mysterious disappearance of a camera-strobe unit being used for underwater photography in Urquhart Bay [28]. A photograph of a loop of rope [29], taken while the camera was presumably being towed about the loch by the monster, was captioned a "rope loop" or "flipper." Rines interpreted a large, bodylike shape into the picture, even though we were told by local residents [30] that a fisherman had caught his propeller in the camera's buoy marker and that the camera had drifted out of the bay into the midwater and was later recovered by a passing LNIB member.

In 1972, Rines produced the dramatic photographs purporting to show the flipper of the Loch Ness monster, taken in Urquhart Bay off Temple Pier with a linked camera-strobe sonar system. According to an illustration published by the AAS [31], a sonar transducer was mounted on the sloping loch-bottom in about 10 meters of water overlooking the camera-strobe unit, which was also secured to the bottom in about 15 meters of water. Photographs taken by the camera-strobe unit could be confirmed by the presence of objects detected within the sonar's beam, and the linked system could provide a rough dimensional analysis of those objects. According to the Academy, on the morning of August 9, 1972, Rines and his crew (personnel from the AAS and the LNIB) waited aboard two boats in Urquhart Bay. One boat monitored the sonar equipment, the other the camera-strobe unit. At around 1:00 A.M. on August 9, the investigators detected what appeared to be large objects moving into the transducer's beam. Underwater photographs were taken and, when developed in the United States, showed only faint shapes [32]. After image enhancement by Alan Gillespie at the California Institute of Technology's Jet Propulsion Laboratory, the flipper photographs, and the photograph apparently showing two large bodies were published in books and magazines throughout the world [33].

Further discussion about the events of August 9 with Mrs. Carey uncovered previously unpublished information crucial to the integrity of Rines's findings. This information was later corroborated by Holly Arnold [34], an active participant in the events of August 9, 1972. Mrs. Carey

recounted to us how, through the night of August 8 and the early morning of August 9, she dowsed for the monster from her house overlooking Urquhart Bay, while Rines remained with the boats on the water. At about 1:00 A.M. she "detected" two monsters in the vicinity of the river's mouth in the bay. Mrs. Carey then alerted Rines to the monsters' location by a prearranged signaling system, involving the flashing of automobile headlamps in a code corresponding to numbered blocks superimposed over a map of Urquhart Bay. Rines and the crews then proceeded to lower overboard the camera-strobe unit from one boat and the sonar transducer from the other.

The sonar traces [35] from the August 9, 1972, encounter indicate that the transducer unit was not secured to the Loch's bottom, as shown in the illustrations in most books and publications, but was free-swinging [36]. Nowhere in these sonar traces can the camera-strobe unit or its umbilical cable be seen as they would have been if the published illustrations had been accurate. With the camera and sonar units deployed in this manner, it would have been impossible for Rines to make any rational correlation between any underwater photographs and the sonar traces. Also, during the sonar contact of August 9, 1972, several investigators were rowing a large wooden fishing boat between the boat tending the sonar equipment and the boat tending the strobe cameras [37]. This could account for the sonar traces attributed to two monsters. In our opinion, the sidelobe echoes from the "flipper" sonar traces show that the transducer was moving about underwater, and the main beam traces have the obvious characteristics of boat wakes.

Apart from the circumstances in which they were obtained, the flipper photographs themselves do not stand up to scrutiny. On returning to the United States in October 1983, we contacted Alan Gillespie at the Jet Propulsion Laboratory and established that Rines had provided him with copies of his 1972 flipper photographs for image enhancement. The computer-enhanced versions were returned to Rines and were subsequently published in *Technology Review* [1]. We have copies of the two original flipper photographs before enhancement [38], the enhanced versions, and finally the published versions. Alan Gillespie sent us copies of the enhanced flipper photographs he returned to Rines, and we discovered that, prior to publication, areas of these enhanced photographs had been significantly altered to give the impression of the flipperlike objects that appear in the published versions. We feel this discrepancy is very important because it was these flipper photographs that led Sir Peter Scott to assign a zoological classification to the creature, *Nessiteras Rhombopteryx* (Ness Beast with the Diamond Shaped Fin) [5].

In 1975 Rines obtained "close up color photographs of the head, neck and body of one of the animals" [39]. They were published in 1976 [1]. The deployment of the camera-strobe unit when these pictures were taken

again deserves comment. Tim Dinsdale describes how the unit was "trailed from the stern of Hunter [Rines's boat] on the end of some 30 feet of rope and allowed to swing around with the boat, as wind and chance determined" [40]. Dick Raynor, a former member of the LNIB, who was present during this expedition, recalled that the camera-strobe unit taking the pictures was retrieved from the bottom of the loch with ten feet of slack on its buoy rope because the boat had swung into shore [41]. Given these circumstances, the published photographs can be most reasonably interpreted as debris on the loch bottom or side walls. Rines claimed to have sonar traces showing the intrusion of large objects into the zone of camera coverage, but these have not been published. On the basis of Rines's 1972 and 1975 evidence, *Nature* published "Naming the Loch Ness Monster" [5], seemingly legitimizing what the facts suggest is unscientific and careless research.*

The Academy of Applied Science returned to the loch in 1976 with the financial support of the *New York Times.* Professor Harold Edgerton (a pioneer in strobe photography) accompanied this expedition. Underwater television cameras and camera-strobe units were suspended from boats and finally attached to a raft moored off Temple Pier. Once again the equipment was not rigidly fixed underwater [11]. At one point during the summer a large sonar trace was obtained that had, said Rines, "the same dimensional extent in 1972 . . . the same type of multiple trace echo and the same type of approach to the camera from behind as in 1975" [42], but *this trace was immediately established to have been caused by the wake of a boat* [43].

A paper by Harold Edgerton in 1978 [3] outlined sonar data gathered during the summer of 1976 at Loch Ness that, while not concluding that a monster exists, suggested that further research was warranted. In this paper, he equated the width of observed sonar targets with the actual trace thickness produced on a sonar chart recorder. However, it should be recognized that there is not necessarily a linear correspondence between a target's sonar track thickness and the true thickness of an object intruding into a sonar beam. No calibration sonar traces were included in his paper for comparison.

Klein, conducting additional side-scan sonar testing in 1976, attached archaeological significance to his discovery of numerous stone circle formations, groups of which he named Kleinhenge I and Kleinhenge II, on the bed of Loch Ness [44]. Our research at the Inverness Museum (summer 1983) quickly discounted his theories, since, during the construction of the

**Note added by editor:* In December 1975, *Science News,* the magazine I then edited, contacted David Davies, the then-editor of *Nature,* for elaboration. He emphasized that Rines's article and photos had been published in *Nature*'s "Comment and Opinion" section, which meant they had not undergone any peer review process. He said *Nature* did not vouch for the validity of the claims (*Science News,* 108:391, Dec. 20/27, 1975).—*K.F.*

Caledonian Canal in the early 1800s, dredge steamers routinely dumped such piles of stones into Loch Ness. Formations similar to those that Klein discovered can also be found near the mouth of the canal in Loch Oich and Loch Lochy.

Conclusion

We have shown that continuous sonar monitoring for seven weeks to a depth of 33 meters in an area where many previous sonar contacts had been reported showed no evidence of anything larger than a 1-meter fish. The circumstances under which previous expeditions had obtained sonar and photographic evidence in support of the existence of the Loch Ness monster could not withstand scrutiny. The evidence itself revealed discrepancies. This is especially true of the Academy's flipper photographs, the published versions of which differ from the original computer-enhanced photographs. Careless deployment of equipment and overzealous interpretation of the data account for much of the so-called scientific evidence.

While it is not possible to prove definitely that a monster does not exist, the evidence so far advanced strongly suggests that the Loch Ness monster is nothing more than a longlived and extremely entertaining legend.

Notes and References

1. R. H. Rines, H. E. Edgerton, C. W. Wyckoff, and M. Klein, *Technology Review*, 78, no. 5 (1976):25.

2. M. Klein and C. Finkelstein, *Technology Review*, 79, no. 2, (1976):3.

3. H. E. Edgerton and C. W. Wyckoff, *IEEE Spectrum*, 15, no. 2, (1978):26.

4. M. Klein, R. H. Rines, T. Dinsdale, and L. S. Foster in *Monograph 1 Academy of Applied Science*, Academy of Applied Science, 1972.

5. *Nature* 258 (1975):466.

6. Report of the *Cambridge Loch Ness Expedition*, 1962.

7. Preliminary report of the *Birmingham University Loch Ness Expedition*, 1961.

8. D. James et al., *Annual Report of the Loch Ness Investigation Bureau*, 1969.

9. A. Shine, *New Scientist*, 97, no. 1345 (1983):462.

10. Radarsonics Model 231, 200 KHz with 8.5° beam width at -3db.

11. M. Klein and C. Finkelstein, op. cit., p. 9.

12. A. Shine, op. cit., p. 466; N. Witchell, *The Loch Ness Story* (Baltimore: Penguin, 1975), p. 104; T. Dinsdale, *The Story of the Loch Ness Monster* (London: W. H. Allen and Co., 1982), p. 105.

13. H. Braithwaite and D. G. Tucker, *New Scientist*, 40, no. 628 (1968):664.

14. D. G. Tucker and D. J. Creasey, *Proceedings of the Challenger Society,* 4 (1970):91.

15. D. James et al., op. cit., p. 16.

16. Our conversations during the summer of 1983 with Ivor Newby, a participant in many expeditions at Loch Ness since the sixties, revealed that monster hunters have either lost or failed to retrieve numerous bits and pieces of their underwater gear over the years. He told us that several plexiglass-enclosed cameras are still presumed floating in the midwater, moored to the lochbed, as are at least two steel gas-cylinders used for sonar calibration tests in the 1960s. This type of debris would give strong sonar returns.

17. Ivor Newby and Adrian Shine, private communication.

18. M. Klein, R. H. Rines, T. Dinsdale, and L. S. Foster, op. cit., p. 39.

19. Ibid., p. 33.

20. Ibid., p. 44.

21. Ibid., pp. 52-54.

22. Ibid., p. 49.

23. Ibid., pp. 41-42.

24. Ivor Newby and Dennis Vann are friends of Mrs. Carey and introduced us to her.

25. Mrs. Carey's sightings have been described in many books and articles about the Loch Ness monster. See W. S. Ellis, *National Geographic,* 151 (1977):763.

26. Dowsing is a method employing a divining rod to locate objects at a distance. The evidence for its success is purely anecdotal and no known controlled study for dowsing has ever produced significant results.

27. We have a copy of Mrs. Carey's map, which includes a brief description of each sighting along with the names of the witnesses present.

28. M. Klein, R. H. Rines, T. Dinsdale, and L. S. Foster, op. cit., p. 79.

29. Ibid., p. 71.

30. Ronnie Bremner and Tony Harmsworth, founders of the Loch Ness Monster Centre, Drumnadrochit, Inverness-shire Scotland.

31. R. H. Rines, H. R. Edgerton, C. W. Wyckoff, and M. Klein, op. cit., p. 31.

32. Ibid., pp. 30-31.

33. These publications include *National Geographic* [25] and *Nature* [5].

34. Ms. Arnold was a member of the LNIB for several years and told us she planned the logistics for the August 9, 1972, attempt to locate the monster by dowsing.

35. Published in *Nature* [5] and *Technology Review* [2]. We were also able to study copies of the traces on display at the Loch Ness Monster Centre.

36. In addition to evidence from the sonar traces themselves, we were told independently by Holly Arnold, Ivor Newby, Gordon Menzies, and Dick Raynor that the sonar unit was hanging off the side of the boat at the end of a rope.

37. N. Witchell, op. cit., p. 147.

38. Copies of the original photographs were given to us by Tony Harmsworth, the co-founder of the Loch Ness Monster Centre, Drumnadrochit, Inverness-shire, Scotland.

39. N. Witchell, op. cit., p. 130.

40. T. Dinsdale, *Photography Journal,* 116, no. 1 (1976):18.
41. D. Raynor, private communication.
42. D. Meredith, *Search at Loch Ness* (New York: New York Times Book Co., 1977), p. 129.
43. Ibid., p. 130.
44. See [2] and W. S. Ellis, *National Geographic,* 151 (1977):763.

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A Final Interview with Milbourne Christopher

Michael R. Dennett

Milbourne Christopher, who died June 17, 1984, in New York City at the age of 70, was an internationally renowned magician. He had been interested in magic from the age of six, when he performed his first trick. A professional conjurer since the 1930s, he earned a reputation as one of the best. He held six trophies for professional originality, and in 1975 he was elected by a conclave of the Society of American Magicians to magicdom's "Hall of Fame." He won the Magic Circle Silver Wand award and was named "Magician of the Year" and a "Star of Magic." He was awarded the Royal Medallion of the All-India Magic Club and was an honorary vice-president of the London Magic Circle.

Milbourne Christopher was also a leading critic of the paranormal. He had long been in the forefront of the investigation of psychic claims, and when CSICOP was established in 1976 he became a founding Fellow. His interest in psychic phenomena stemmed from his discovery, as a teenager, of deception and trickery employed by local mediums. Throughout his career, he investigated crystal-gazers, future-tellers, clairvoyants, fire-walking, and living burials. His work in this field led him to call for stringent precautions by parapsychologists when attempting to research the area of psychic phenomena. He urged that parapsychologists employ qualified magicians as "observers."

Christopher was a frequent guest on television and radio. He performed on many TV specials as a magician and co-hosted both the "Today Show" and the "Mike Douglas Show." He was a biographer of Houdini, and he maintained an outstanding collection of memorabilia about the great escape-artist's career.

He was the author of more than twenty books, including Mediums, Mystics and the Occult *(Crowell, 1975),* ESP, Seers and Psychics *(Crowell, 1970),* Search for the Soul *(Crowell, 1979, reviewed in* SI, *Spring 1980), and* Houdini: The Untold Story *(Crowell, 1969). His most recent book is* Houdini's "Magic in Boston, 1792-1915" *(Meyerbooks, 1983). His books on psychics and mediums are entertaining and readable critiques and are gentle in tone and spirit. He will be missed.*

This final interview with Milbourne Christopher was conducted for the SKEPTICAL INQUIRER *in 1983 by Michael Dennett, chairman of the Northwest Skeptics.*

Photo by Phillippe Halsman

Christopher concentrating on ESP cards

SI: You have been an outspoken critic of the paranormal for many years. Do you have any regrets?

M.C.: Certainly not. I have always given an honest opinion about whatever phase of it I've been asked.

SI: As a magician and the chairman of the Occult Investigation Committee of the Society of American Magicians, do you feel that conjurers have an obligation to speak out about the paranormal and particularly ESP?

M.C.: I do not think that magicians have an obligation to speak out against the occult, but I do believe that magicians frequently can help the public by pointing out that alleged psychics are using trick devices and tricky procedures.

SI: In your work on the Occult Investigation Committee, have you ever run across a trick you couldn't do?

M.C.: Thinking back, there may have been some feats through the years that I could not do, either because my hands were too large or too small or because of some other physical restriction. But I've never run across any proof of extrasensory perception.

SI: Recently, on a national television show in which James Randi

appeared, there was a demonstration of fire-walking. You have investigated fire-walking; can you comment?

M.C.: The fire walk on the show, I think, could have been explained by Randi had he wished to do so. I have done a great amount of research on this topic and I have walked on fire myself.

SI: What was the most intriguing case of an alleged paranormal phenomenon you have ever been involved in?

M.C.: Possibly the Enfield case in England. I was there when the "strange" things started happening in this little suburban section of London. It was one of the few alleged poltergeist cases in which I was involved where the strange things happened when I was in the house. Normally, when I go to a poltergeist house the "haunting" influences disappear immediately. But there I had a chance to observe the techniques.

SI: What were the techniques?

M.C.: A little girl who wanted to cause trouble and who was very, very clever.

SI: In Colin Wilson's latest book, *Poltergeist,* he mentions the Enfield case. Mr. Wilson does not make any reference at all to you regarding this incident but does rely on the research of Guy Playfair.

M.C.: I think it would be illogical that Wilson would mention me. I should add that Playfair wrote an entire book on this one case.

SI: Wilson makes Playfair the hero of his latest book and strongly implies that Playfair's research is sound.

M.C.: My feelings are just the reverse of Wilson's. I have no confidence in Playfair's writing at all. When I was in England I spent most of one night with Playfair on the Enfield case and came to the conclusion I already mentioned. I should add that there were many others who were critical of the Enfield case.

SI: You recently appeared on the Candy Jones radio show in New York City as a skeptic of the paranormal. Do you feel that this type of public appearance is effective?

M.C.: Yes. I frequently have been on the Candy Jones show and before that the Long John Nebel show and many programs all across the country. Some I do by telephone, most when I am in a particular city. Recently, the ABC television station here had a week devoted to the occult, and they asked me to make comments, which I did, and these comments were inserted throughout the programs.

SI: You once had a close encounter with the prominent parapsychologist J. G. Pratt. Could you relate to us the circumstances of this meeting?

M.C.: Yes. This was at the time of another celebrated poltergeist case: the Seaford [New York] case. Pratt and his wife visited my apartment, and I caused a number of things to happen here that had been reported earlier in Seaford. The business of a figurine flying across the room, the toppling of bottles in the bathroom, etc. It was very interesting to see his

reaction. I let him go throughout the house. He went into the next room and asked to have the lights turned off so that he could see if there were any holes in the wall; which there weren't, by the way.

SI: Now, as I understand it, you had caused a figurine to fly across the room, as is common in the poltergeist phenomenon?

M.C.: You say I caused it. Let me say that we were talking about the [Seaford] case and I called attention to the figurine, and suddenly it took off, apparently on its own. Again, later when we were talking about bottletops popping, suddenly there was a popping noise. He went down the hall and into the bathroom, and there was a bottle on its side with its contents pouring out.

SI: Obviously Mr. Pratt did not think a poltergeist phenomenon had taken place, but he could not explain the events. Correct?

M.C.: He did not know how I had accomplished these effects. The fact that I was critical of the subject and was a professional magician and made no psychic claims naturally did not lead him to believe that this was supernormal. But if he couldn't explain what had happened here, which in essence was what happened at the house in Seaford, why would he be eligible to explain what happened there?

SI: Uri Geller, among others, has been financially very successful as a psychic. He is also a former magician, how do you react to his success?

M.C.: When you say that he is a former magician, I disagree with you. To the best of my knowledge, throughout his career he has professed to have some mysterious power that he still claims to have. He uses magicians' methods: trickery. In my opinion, he was never a magician but is an outright charlatan.

SI: You have taken shots at quite a number of fake scientists, including phrenologists, teacup readers, and numerologists. What about graphologists? Is it not possible that one's handwriting can reveal his or her character?

M.C.: Whether or not character can be revealed by graphology, I don't know. Certainly someone who is very, very familiar with handwriting and the nervous system can learn from the handwriting a lot about the nature of the person. In other words, in my opinion, if you had a certain illness you would write one way and if you were perfectly healthy you would write another way. When you get into that area it is worthy of study.

SI: What would you say about the person who generally represents him or herself as a graphologist?

M.C.: I am very unimpressed. I was speaking of people who have actually made a study of handwriting and writing under stress. Those who claim to delve deep into the human being and tell what will happen in the future do not impress me at all.

SI: It has been said that Houdini was the greatest magician of all

Milbourne Christopher is seen here at work as a magician with his "poltergeist cabinet." The cabinet was used in an act from the show "Christopher's Wonders," which toured the British Isles after its New York premier in the 1960s.

time. As one of his biographers, can you set the record straight about where he stood on the occult?

M.C.: Houdini was the greatest showman among magicians to date and it is doubtful that he will be topped. As a young man he was intrigued by the occult, until he found that there was fraud in it. There is a parallel here. As a boy in Baltimore, when I began studying conjuring, I also heard of people who were doing marvelous things. That led to my interest in investigations into the occult. Getting back to Houdini, after the death of his mother, he had a real reason for going to those who claimed to communicate with the dead. If he could have reached her, he certainly would have been delighted, but again he saw fraud. I have many of his unpublished reports on his investigations, which one of these days I must write up. I think he was completely sincere in these investigations, and he was greatly distressed by the trickery he found.

SI: Houdini met Sir Arthur Conan Doyle on a trip to England. Doyle, who was a strong believer in the paranormal, was convinced that Houdini possessed some extrasensory powers. Is this accurate?

M.C.: Yes. Doyle did believe that Houdini could cause himself to disintegrate or that he could seep out through a crack in a door or a keyhole and then reassemble his body on the other side. Doyle was a

brilliant writer and very rational when he wrote about Sherlock Holmes, but in his investigations of the occult another side of the man is shown. This other side is still evident today in scientists and investigators who are brilliant chemists or analysts, and so on, but have this blank spot in their reasoning. When they are up against what they think are psychic phenomena, the casual observer is amazed by what these people say they believe.

SI: You have been involved in investigating some psychic healers. What is your opinion of them?

M.C.: This healing business is a great, great problem. What causes healing is known in some areas, but in others we don't know. I abhor the psychic surgeon type of healer who allegedly plunges his hand into the body of someone and removes an organ. This is obvious fraud. On the other hand some ailments of a nonphysical nature can be, I think, cured by suggestion.

SI: Do you mean psychosomatic illnesses?

M.C.: Yes.

SI: What about astral projection?

M.C.: I think it is nonsense. It's one thing to claim to project yourself to a distant place and another to give proof that you were there. It seems to me it would be very simple to prove under test conditions if you could really do it.

Milbourne Christopher on NBC's "Tonight Show" demonstrating how "mediums" create certain effects. In this photo, with Kay Ballard and host Johnny Carson, Christopher was using a collapsible metal pole, or "reaching rod," produced from his pocket with his free hand. The reaching rod, used in the dark, is employed so that a "spirit" can touch someone's arm.

SI: Have you ever met Ingo Swann?

M.C.: I have been in his company, yet I have not talked with him.

SI: On that occasion did he offer to prove that astral projection is possible?

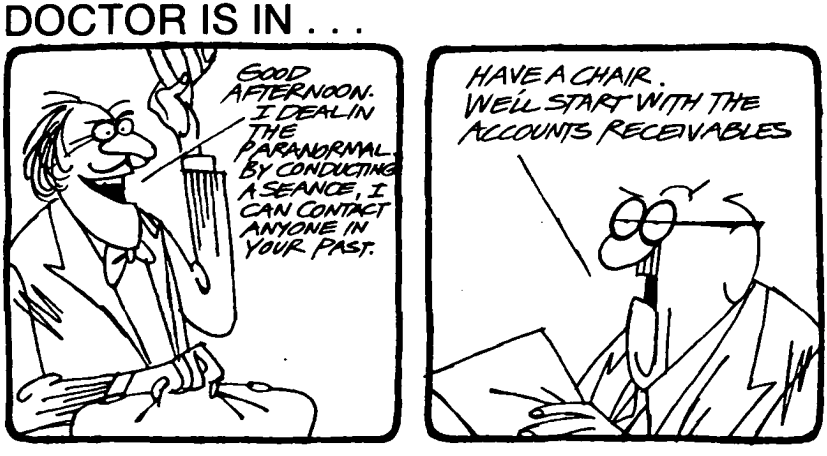
M.C.: No. He is, by the way, one of the cleverest in the field. In my book *Search for the Soul,* there is an account of tests run on him by the American Society for Psychical Research in New York, which should be required reading for anyone fascinated by the topic.

SI: Can you give any advice to the average person on how to handle claims of the paranormal that he or she might encounter.

M.C.: My recommendation would be to study the subject. Look at the critical side as well as the affirmative side. Knowledge is the essential thing.

SI: You have been investigating the paranormal a long time. There seem to be more active skeptics today. Can you offer any advice to the younger skeptics.?

M.C.: Quite frequently skeptics can appear to the public as unreasonable as the believers. I think it is very important that whoever discusses a case should present it in such a way that it will not antagonize the readers or listeners. •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HAVE A CHAIR. WE'LL START WITH THE ACCOUNTS RECEIVABLES

Dave Harbaugh/*American Medical News*, reprinted by permission

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A Retest of Astrologer John McCall

A larger, carefully controlled test with 28 students also yields random-chance results.

Philip A. Ianna and Charles R. Tolbert

IN THE FALL of 1982 an advertisement appeared in the *Washington Post* criticizing scientists for giving short shrift to astrology and offering to demonstrate astrology in a scientific way. The test devised by John McCall was described as follows:

> Let a person write down the date and place of his birth, plus four times of day. One of these times is to be his actual time of birth. By studying the face and build of that person and consulting astrological tables, I can pick out the true time of birth.

The ad was called to the attention of George Abell, and subsequently James Randi arranged a test venue for McCall. An account of this experiment appears in the Summer 1983 SKEPTICAL INQUIRER. The test was limited to five people assembled by Randi. According to McCall, the test did not meet with his approval, owing to the presence of three individuals who did not meet the criteria he wished for the test subjects. He was successful in only one of five cases but felt the failure was due to the selected participants and the small number. A further, larger test was discussed but not performed.

Quite independently one of us (PAI) also proposed to take up McCall's challenge to carry out a carefully controlled test of his abilities. He was most interested in doing this, and vigorously encouraged us to organize a trial to be carried out at the University of Virginia.

Philip Ianna and Charles Tolbert are astronomers in the Department of Astronomy and Leander McCormick Observatory, University of Virginia.

Experimental Procedure

Making use of a pool of students from a large section of Introductory Astronomy, one of us (CRT) distributed a questionnaire soliciting information about their willingness to participate in an astrological experiment. The students were not informed of the criteria set by the astrologer; however, sufficient information was requested on the questionnaire that a choice could be made to ensure only the appropriate students were chosen—that is, students who had natural births, not Caesarean section or chemically induced births; students who knew their birth date and time to the nearest 15 minutes; and students who were classified as Caucasian in racial characteristics.

There were 80 students who fell into this category, and those students were informed by mail to come to a central location to fill out further forms. They were also instructed to bring with them either their birth certificates or some documented evidence of their birth date and time. When they arrived they were asked to fill out two forms. One required only the birth information; the other, only personal information—name, address, telephone number, and so forth. A copy of their documented evidence was placed in a sealed envelope. The two forms—birth information and personal information—were immediately separated into individual boxes and were not brought together again until after the experiment. The three pieces of information, birth, personal, and sealed envelope containing documented backup, were related to one another by a code known only to CRT.

Thirty-three students complied with the request to fill out the forms. The birth-information sheets were given to a secretary, and she was asked to transcribe the birth information and to produce three pseudo-birth times by applying ± 4, ± 8, ± 12, ± 16, or ± 20 hour shifts to the data. The time shifts were chosen by randomly selecting slips of paper from a box. Each student was assigned a letter of the alphabet as a code, and the birth information was typed on a list giving for each student four birth times in increasing order. This list of birth data was transmitted to McCall, who produced four horoscopes for each student. The original birth-information forms were deposited by the secretary in a location not available to any of the experimenters.

Using the predetermined coding, CRT associated the personal information with the code letters and arranged for the students to arrive in a scheduled pattern during two afternoons to be interviewed by the astrologer. On arrival, the students were informed of their letter identification and were taken to the astrologer's office, where he met with each student for about five minutes. Most of the questioning was carried out by PAI, although occasionally the astrologer asked a question. The students were brought back to the original gathering point and were asked to write down

their birth date and time. While this was happening, PAI took the horoscope selected by the astrologer and wrote down the birth date and time from that horoscope. Twenty-eight students actually completed the full experiment.

Results

Throughout the experiment, care was taken to ensure that the astrologer was fully satisfied with the experimental technique and the choice of subjects. He indicated in a letter to us his satisfaction with the manner in which the test was carried out:

> . . . let me compliment you on the honest and professional way the experiment was conducted. The staff there at UVA left absolutely nothing to criticize in the way they handled the matter.

At the end of the interviewing on the second day, the list of birth times of the students in the order they appeared was compared with the list of birth times from the horoscopes selected by McCall. Of 28 students who completed the experiment, he had correctly predicted the birth times for seven. So, given the task of choosing the correct one of four possible answers, McCall did no better than one would have expected from random guessing.

McCall was visibly depressed when the final tally was in. Since the experiment, he has expressed his inability to explain his lack of success. Again we quote from his letter:

> As for the results, they were a great disappointment to me, as well you can imagine. But there is one fact which cannot be overlooked: the fact that I have done exactly as I promised on many other occasions. . . . And it would be a miscarriage of justice to let the bad performance constitute the entire "official" record, when I know, and many other people know, what has already been done. I do not know why the results of the experiment came out the way they did. It might be that the missed night's sleep and the saturation dose of coffee were to blame, although I did not feel any distress at the time. I intend to continue performing this experiment at every opportunity to see if I have lost the touch. And if I have not, it will probably take God-knows-how-many-years to get "on the record" again.

In a second letter, McCall suggested he might have more readily matched a single chart with the correct individual chosen from among a group of four people, since he felt the difficulty was in determining what factor in the chart caused a particular trait to be emphasized enough to dominate the physical appearance. Therefore he intends to do his test in the future by choosing the person in a group who fits the chart rather than

the chart that fits the person.

We, on the other hand, are quite satisfied with the outcome of the experiment. Once again astrology has not prevailed where a controlled test has been carried out. McCall retains his faith in his abilities, based on several individual successes, but the fact is that the "scientific way" has demonstrated astrology does not work.

Acknowledgment

We would like to thank the University of Virginia students who gave their time and produced documented birth data to assist in this experiment: David Adler, who helped in the logistics of scheduling subjects during the experiment; Nancy Batchman, Virginia Bossong, and Patricia Williams for their help with the paper work; and John McCall for his stimulation and gracious participation. •

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Book Reviews

Intent Clear, Goal Unmet

Clear Intent: The Government Coverup of the UFO Experience. By Lawrence Fawcett and Barry J. Greenwood. Prentice-Hall, Englewood Cliffs, N.J., 1984. 264 pp. $8.95.

Philip J. Klass

THE THEORY THAT the U.S. government has been withholding "the truth" about UFOs has sustained the UFO-faithful during their nearly 40 years of wandering in the barren desert of UFOlogy. Leaders of the UFO movement hope that the new book *Clear Intent* will provide sorely needed sustenance to rejuvenate the movement from its present comatose condition.

For example, Walter Andrus, international director of the Mutual UFO Network (MUFON) predicted a year before the book's publication that it would be "the vehicle that will force the Pentagon and our government intelligence agencies to reveal why they have conducted a 'Cosmic Watergate,' or coverup, with respect to their involvement with UFOs."

More recently, this leader of the nation's largest UFO group said: "I feel confident that the Freedom of Information Act documents published [in the book] will significantly stir the American public's interest in the UFO phenomenon and the 'Cosmic Watergate' that has been so prevalent since the 1947-1948 era." In this reviewer's opinion, the first of Andrus's predictions will not occur and the second is not likely.

If Andrus and the book's author are correct, every American president since Harry Truman, despite their sharply divergent views on many issues, have been able to agree on only one thing—that "the truth" about UFOs must be withheld from the public. Even Richard Nixon seemingly was able to sustain this UFO secret for his six years in office despite his inability to contain the Watergate scandal for more than a few months.

Philip J. Klass is a senior editor of Aviation Week & Space Technology *and chairman of CSICOP's UFO Subcommittee. He is author of* UFOs Explained *(1974) and* UFOs: The Public Deceived *(1983).*

Having myself carefully studied most of the documents quoted in *Clear Intent* (as reported in my own book *UFOs: The Public Deceived*) and additional documents released under FOIA that authors Fawcett and Greenwood chose to omit or censor, I reach quite the opposite conclusion. Even the authors admit that they are perplexed by some actions of government agencies that argue against a coverup.

For nearly three decades after UFOs were "discovered" in 1947, the U.S. Air Force was the victim of UFOlogists' charges of coverup. In the late 1940s and early 1950s, there was some secrecy, for reasons explained by Capt. Edward J. Ruppelt in a briefing of top officials of the Air Defense Command in early 1953, when Ruppelt directed the USAF's Project Blue Book UFO investigations. In Ruppelt's briefing, later declassified and published, he said: "The required security classification for admittance to this briefing is Secret. The reason for this is that in some instances we may get into a discussion of classified equipment, classified locations or classified projects during the question and answer period that follows this briefing.

"When the [UFO] project was first started, it was classified Top Secret. This is probably the reason for the rumors that the Air Force has Top Secret information on this subject; it does not. The only reason for the original classification was that when the project was first started the people on the project did not know what they were dealing with and, therefore, unknowingly [*sic*] put on this high classification," Ruppelt told top Air Defense Command officials. Not surprisingly, Fawcett and Greenwood make no mention of Ruppelt's once-classified briefing.

More than 20 years later, in the mid-1970s, Ruppelt's statements were confirmed when the USAF, after having closed down the project in 1969, made public all of its Project Blue Book files in the National Archives. UFOlogists poured over the many tens of thousands of pages of file material looking for a "smoking gun." When they could not find any, they did not admit they had been wrong. Instead they simply changed targets and charged that it was the Central Intelligence Agency that was involved in a UFO coverup. There was some slight basis for their suspicions.

In mid-1952, the CIA had become interested in UFOs, and there were some within the agency who were eager to launch a major investigation. But, in early 1953, the CIA had secretly convened a panel of top scientists, headed by Dr. H. P. Robertson, to consider the USAF's most impressive UFO cases. The Robertson Panel concluded that all of these UFO reports were explainable in prosaic terms and showed no evidence of advanced foreign technology, either Soviet or extraterrestrial, and so the CIA promptly abandoned plans for its own UFO investigation. Word of the Robertson Panel had leaked to UFOlogists in 1958, and in 1966 the highlights of its "Secret" report were even published in *Saturday Review*.

If Congress had not passed the Freedom of Information Act, UFOlogists could never have known with certainty that the CIA had never launched a major UFO effort and that its post-1953 interest was so scant that it did not assign even one person to monitor UFO reports on a full-time basis. When attorney Peter Gersten, with a longtime personal interest in UFOs, volunteered to obtain once-classified UFO material through FOIA, UFOlogists expected they would strike gold. Largely through Gersten's efforts, approximately 3,000 pages of material were located and released from CIA files and those of the Defense Intelligence

Agency, the National Security Agency, and the Federal Bureau of Investigation in the late 1970s. It turns out to be "fool's gold."

Most of the material dates back more than a quarter of a century—a key point that most UFOlogists, including the authors of *Clear Intent,* gloss over or ignore. Included are newspaper clippings of foreign UFO sightings, submitted by overseas embassies, as well as magazine articles. There are more than 50 pages of correspondence with a single UFOlogist who is certain the CIA itself is building UFOs to brainwash the American public. (Even today, this UFOlogist reportedly clings to that view.)

The authors withhold from their readers considerable information that would damage their coverup hypothesis. For example, when Gersten filed his original FOIA request in 1978, he asked the CIA to release files on a number of specific UFO incidents. To Gersten's amazement, the CIA responded by asking him to change his request to ask that the agency release *all* of its UFO file material, which he promptly did. Curious behavior if the CIA was trying to withhold UFO information. But it made good sense if the CIA had nothing to hide and was anxious to spare itself the need to make repeated searches of its dusty files in response to a never-ending stream of FOIA requests on each of many thousands of UFO incidents.

If the alleged coverup is accorded the highest priority in the nation, how could intelligence agencies such as CIA, NSA, and DIA be so stupid as to release material that the authors claim to be so incriminating? Why not simply destroy it, or deny its existence? After all, the authors claim that NSA alone shreds more than 80,000 pounds of paper every day. The authors are even more puzzled by actions that seem to them to indicate that there are persons within these agencies who are eager to help UFOlogists penetrate the alleged coverup.

For example, in 1968, an NSA employee whose name is withheld because of the Privacy Act, and who obviously was a believer in UFOs, gratuitously wrote and circulated a paper on the subject that found its way into the agency's files. In response to Gersten's FOIA request, NSA released his paper with a disclaimer that it had no official status and simply reflected the 1968 views of one of its employees. Fawcett and Greenwood are perplexed that NSA would release a paper supportive of UFOs and note that "it would have been easy for the NSA to release something which argued strongly against UFOs," i.e., to have prepared an anti-UFO paper and released that. This prompts the authors to suspect that "people within the NSA want the public to know what is happening." The alternative explanation, that there is no coverup, is not considered by the authors.

In another instance, UFOlogists sought a report on a UFO incident that allegedly had occurred in a forest near a USAF base in England. In response to an FOIA request, a USAF organization was able to borrow and supply a copy of a brief memo on the incident from the Royal Air Force when it found it had no copy in its own files. This beyond-the-call-of-duty initiative prompts the authors to ask: "Could there be a segment within the Air Force that wants us to have the facts on UFOs? It's a distinct possibility."

"Another striking [CIA] memo," according to the authors, dated October 1, 1958, reports that an unnamed (i.e., name censored for privacy) unemployed civilian who had been experimenting with new types of photographic film claimed to have made photos of UFOs on a number of occasions. The writer of the memo (name censored) indicated he himself would like to see the photos but indicated

he did not want to get involved if there was no CIA interest. Fawcett and Greenwood claim that it is not known whether the CIA ever analyzed these UFO photos "because no further file material on this affair has been released but it certainly belies claims by the CIA at the time of not being interested in UFOs."

Had the authors been more diligent they would have found another released CIA memo, signed by Philip G. Strong and dated October 29, 1958, in reply to the October 1 memo. The reply was addressed to the director of the Photographic Intelligence Center, who then was Arthur Lundahl, a man with a longtime interest in UFOs. Strong's reply said that his office of scientific intelligence "has an interest in keeping track of UFOs, however the overall community responsibility for investigating UFOs . . . is vested in the Department of the Air Force."

The next significant documents the authors find in the CIA files are dated nearly 20 years later—a series of memoranda exchanged between unnamed CIA employees, involving an unsolicited report submitted by an unnamed (censored) scientist outside the agency. As a result, an unnamed (censored) CIA employee made inquiries to determine if the CIA, or any other government agency, would be interested in examining the unsolicited report. In a memo dated April 26, 1976, he wrote that "it does not seem that the government has any formal program in progress for the identification/solution of the UFO phenomena." Based on this and equally "incriminating" documents, Fawcett and Greenwood claim to see an "unambiguous pattern of continuing interest and monitoring of the UFO phenomenon by the CIA."

It is hardly surprising that the authors are confident that there is even more incriminating evidence in the 156 pages of UFO-related material that NSA has refused to release and in the 57 pages that the CIA has declined to make public. The unreleased NSA documents cover a period of 21 years, from 1958 to 1979, or *an average of less than eight pages per year.* More important is the nature of NSA's mission and of these documents, according to the agency's stated rationale for not releasing them, which has been upheld by the U.S. Supreme Court in response to Gersten's appeal.

One of NSA's principal missions is to eavesdrop on the radio communications of the Communists and other potential enemies and to try to decode their encrypted messages. In some instances NSA's "listening posts" are located in "neutral" countries whose leaders are sympathetic to the West but would be embarrassed if such cooperation, past or present, were made known. Additionally, NSA would not want to reveal that it had been able to decode messages in the 1958-1979 period, for that would reveal that these codes—modified versions of which may still be in use by Soviet Bloc countries—had been compromised.

One can only speculate as to what these NSA-intercepted Soviet Bloc, UFO-related messages might involve. Possibly some were messages exchanged between Moscow and the Soviet embassy in Washington, asking about the results of USAF investigations into UFO reports, while others might involve UFO reports by Communist Bloc military pilots. The significant fact is that if any of these NSA-intercepted/decoded messages reveal that the USSR has discovered "the truth" about UFOs, it seems strange that the Soviet Union would cooperate with its arch-enemy to maintain a coverup.

What of the 57 pages of material still withheld by the CIA? Is it possible that so large an agency would generate *an average of only two sheets of paper per year* on so important a subject if the agency were truly keenly interested and actively

investigating UFOs? The significant number of documents itself belies the claim of Fawcett and Greenwood, and others.

We know from released CIA documents that in 1952 the agency's analysts were puzzled by the fact that there had been UFO reports from many countries—but not one (at that time) from the Soviet Bloc countries. This had prompted concern that perhaps UFOs were a secret Soviet reconnaissance vehicle or part of a psychological warfare effort. Certainly the agency would have asked its secret agents behind the Iron Curtain to investigate, and their reports undoubtedly are included in the unreleased CIA material. While some of the agents may no longer be alive, their families may still reside in the USSR and need to be protected.

After reading all of the released documents, Fawcett and Greenwood reach a startling conclusion: The U.S. government "probably [does] not have a definite 'answer' to the UFO problem, but they monitor the phenomenon in pursuit of an answer." Thus *the "Cosmic Watergate" exists to coverup the government's ignorance, not its knowledge, as other UFOlogists claim using the very same evidence!*

If the government is too stupid to recognize the implications of evidence in its own files, Fawcett and Greenwood are not so handicapped. They are certain that "UFOs are a real, material, physical phenomenon . . . display intelligence of a very high order . . . [and] that these life forms are here for a purpose. A 'clear intent' has been demonstrated numerous times."

The authors conclude that "UFOs have overflown U.S. military and other government facilities since World War II. . . . This activity has extended to other nations. . . . A definite threat to U.S. national security is considered as fact within the highest levels of government. This scenario also applies to foreign governments." The authors make a brief, obscure admission that many UFO reports turn out to have prosaic explanations, but every UFO reported in the vicinity of a military base seems to them to be an "authentic" one. Military officials who are responsible for protecting this nation from any potential military threat, whether terrestrial or other, seem oblivious to the threat perceived by the authors.

Or has the threat finally been recognized? Is it possible that President Reagan's now-famous "Star Wars" speech of March 23, 1983, was not really intended to explore the use of spaceborne lasers and similar Buck Rogers concepts as a possible defense against Soviet ballistic missiles? Perhaps that was simply a cover and the multi-billion-dollar Star Wars effort is intended to defend against UFOs. It is surprising that Fawcett and Greenwood did not raise this possibility even though their book went to press after Reagan's speech.

Perhaps this wild speculation will be added if this book goes into subsequent printings, which seems likely, because it will be popular among UFO buffs. It will be popular because it reads more like the books of Donald Keyhoe, who popularized UFOlogy in the 1950s and early 1960s, and all but ignores claims of crashed saucers and UFO-abductions that have dominated recent vintage books and challenged the credulity of even hard-core UFO-believers.

The most accurate and unchallengeable statement to be found in *Clear Intent* is the authors' acknowledgment to "the FBI, CIA, NSA, DIA, State Department, Air Force and many other federal agencies for providing valuable documentation, without which this book could not have been possible." (If the book's royalties were distributed on the basis of content, probably 80 percent should go to the U.S. government.)

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THE SKEPTICAL INQUIRER

INDEX

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If there is indeed a "Cosmic Watergate," it seems surprising that it never occurred to any one of those assigned to direct the coverup through these many decades that all this information that UFOlogists find so incriminating should be shredded or otherwise destroyed, especially after FOIA became the law of the land. But, who knows, perhaps all of the persons responsible for maintaining the coverup secretly wanted the public to have the facts. To borrow a phrase from the authors, "It's a distinct possibility." But quite unlikely. •

Some Recent Books

Culver, R. B., and P. A. Ianna. *The Gemini Syndrome: A Scientific Evaluation of Astrology.* Prometheus Books, 700 E. Amherst St., Buffalo, NY 14215, 1984, 222 pp., $11.95, paper. Welcome new edition of the authors' 1979 appraisal of astrology. This is the best book-length critical examination of astrology available. The authors, both astronomers, are firm, open-minded, and fair in their approach to a subject that they admit is popular with the public and often confused with astronomy. Our reviewer of the original Pachart Publishing edition, the late astronomer Bart Bok, called it "quite a remarkable book" (Winter 1980-81). An epilogue concisely covers events since the first edition.

Finucane, R. C. *Appearances of the Dead: A Cultural History of Ghosts.* Prometheus Books, Buffalo, N.Y., 1984, 232 pp., $18.95. Humanities professor explores three problems: how the dead have been perceived in western European traditions; what changes have occurred in these perceptions throughout the centuries; and why these perceptions have altered.

Gardner, Martin, ed. *The Sacred Beetle and Other Great Essays in Science.* Prometheus Books, Buffalo, N.Y., 1984, 427 pp., $22.95. New, expanded edition of Gardner's long-out-of-print 1957 anthology *Great Essays in Science.* Added to the original's essays by such luminaries as Einstein, Huxley, Darwin, Wells, Carson, and Russell are writings by four premier scientific essayists from the past decade: Asimov, Gould, Lewis Thomas, and Sagan. Admirably met is Gardner's goal: ". . . to spread before the reader a sumptuous feast of great writing—absorbing, thought-disturbing pieces that have something important to say about science and say it forcibly and well."

Kagan, Daniel, and Ian Summers. *Mute Evidence.* Bantam Books, New York, 1984, 504 pp., $4.95, paper. Forget about the sensationalized cover type, this is a remarkable book. The authors, both writers, set out to discover the truth about the mystery of the so-called cattle mutilations reported all over the United States. They began thinking (as did I, by the way) that there might be something to the claims, but ended—several years, thousands of miles, and 500 pages later—concluding that the cattle mutilation reports were a modern myth filled with symbols that objectify the fears and needs

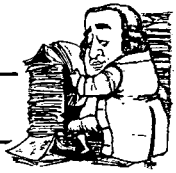
of people. Yet this is no philosophical tract. It is filled with first-hand reporting, never-before-reported anecdotes, lively writing. Their word-by-word dissection of the "pro-mute" Denver television documentary "Strange Harvest" is a marvel of clear thinking. Time and again they repeat that feat. In its breadth, depth, illuminating detail, curiosity of approach, and overall common sense, in final analysis it stands as certainly the best work ever written on the cattle mutilation phenomenon and one of the better book-length examinations of any such popular mystery.

McGowan, Chris. *In the Beginning. . . .* Prometheus Books, Buffalo, N.Y., 1984, 208 pp., $10.95, paper. Subtitled "A Scientist Shows Why the Creationists Are Wrong," this book by the curator of vertebrate paleontology at the Royal Ontario Museum "was written to show just how groundless their [the creationists'] arguments are and what a backward step it would be to heed them in the guise of 'fairness.' " The chapters present the evidence for evolution in the context of responding to creationist misinformation.

Select Committee on Aging. *Quackery: A $10 Billion Scandal.* Comm. Pub. No. 98-435, Subcommittee on Health and Long-Term Care, House of Representatives, 98th Congress, U.S. Government Printing Office, Washington, D.C., 1984, 250 pp., paper. Strong attack on medical quackery, resulting from a four-year committee investigation. (See News and Comment, this issue.)

—*Kendrick Frazier*

Articles of Note



Chandler, David L. " 'Paranormal' Powers: Proof Remains Elusive." *Boston Globe,* Aug. 13, 1984, pp. 49 and 52 (Sci-Tech section). Excellent and lengthy report on the inconclusive results of parapsychology. Exercises all appropriate reportorial and scientific skepticism.

Davis, Bernard D. "A Scientist's Opinion: Science, Fanaticism, and the Law." *Discover,* August 1984, pp. 24-25. Statement by Harvard physiologist calling attention to the doctrinaire mystical aims and pseudoscientific tactics of Jeremy Rifkin, who sought and obtained an injunction against the release of recombinant bacteria. The modified bacteria are harmless, Davis emphasizes. The court decision (by Judge Sirica) swayed by Rifkin's rhetoric, has "given Jeremy Rifkin's pseudoscientific, apocalyptic predictions more credibility than they would otherwise have." Part of a larger *Discover* examination of the issue.

Donnelly, F. K. "The Perfect World of Astrology." *Humanist in Canada,* 69(17):20-22, Summer 1984. Essay imagines the way the world would be different if astrological tenets were not only valid but perfect.

Feder, Kenneth L. "Irrationality and Popular Archaeology." *American Antiquity,* 49(3):525-541, July 1984. Excellent article addressed to fellow archaeologists. Deals with (1) the reasons for people's attractions to highly speculative claims of popular archaeology and (2) issues of how professional archaeologists should respond. Includes results of two questionnaire surveys: student belief in and acceptance of extreme and pseudoscientific claims made in the name of archaeology or prehistory, and the levels of response to or coverage of such claims by professional teaching archaeologists in their classrooms. Concludes by urging archaeologists to confront these sorts of issues in introductory courses.

"Feedback." *New Scientist,* Aug. 2, 1984, p. 52. Brief report giving solution to a UFO scare over southeast England in early July. Every night for two weeks a brilliant starlike object appeared almost overhead, as seen from London and the Home Counties, hovered noiselessly for half an hour and, at 9:48 P.M. precisely, suddenly disappeared. Observatories and the Meteorological Office (which said it was not any weather balloon they had launched) denied all knowledge of it. The British Astronomical Association eventually discovered that the "UFO" was a series of balloons launched by the Ministry of Defense daily at 9:15 P.M. from a park in Bracknell. The balloons were covered by a thin, metallic film to reflect the light of the setting sun.

Fraknoi, Andrew. "Scientific Responses to Pseudoscience: An Annotated Bibliography." *Mercury,* July-August 1984. Updated, four-page list of nontechnical books and articles to introduce the reader to informed authoritative examinations of claims of the paranormal. (Reprints available by sending $1 for expenses to Astronomical Society of the Pacific, 1290 24th Ave., San Francisco, CA 94122.)

Gardner, Martin. "Cruel Deception in the Philippines." *Discover* (Skeptical Eye), August 1984, p. 3. Column condemning psychic surgery and publishers who have promoted it. Television actor Andy Kauffman was the latest victim of cancer to make a "sad, futile effort to be cured by a psychic 'surgeon.' " Concludes Gardner: "The tragedies occur when the seriously ill, swayed by the glowing testimonials of famous personalities and irresponsible journalists, forgo reputable medical aid until it is too late."

Golden, Gayle. "Parapsychology: In Quest of Legitimacy." *Dallas Morning News,* Aug. 6, 1984, pp. 1-2E. Lively and balanced report on the somewhat ambiguous status of parapsychology. Pictures it as a troubled science yet to gain much scientific respectability.

Holmes, David S. "Meditation and Somatic Arousal Reduction: A Review of the Experimental Evidence." *American Psychologist,* 39(1):1-10, January 1984. Reviews issues associated with research on meditation. A review of research finds no consistent differences between meditating and resting subjects on measures of heart rate, respiration, blood pressure, skin temperature, EEG activity, or various biochemical factors. A review of research on the effects of meditation in controlling arousal in threatening situations did not reveal any consistent differences between meditating and nonmeditating subjects.

Johnson, Robert D., and Craig H. Jones. "Attitudes Toward the Existence and Scientific Investigation of Extrasensory Perception." *Journal of Psychology,* 117:19-22, 1984. Examination of the relationships among subjects' beliefs regarding the existence of ESP, their beliefs regarding the appropriateness

of scientific investigation of ESP, and their performance on a clairvoyance task.

"The Little Spaceship That Wasn't." *Discover,* October 1984, p. 8. Skeptical Eye column disparages the latest (it's an almost annual event) claim out of the Soviet Union that the 1908 Tunguska explosion was of a spaceship. (Most scientists feel it was of a comet or asteroid.) Discusses Soviet ideological reasons for not squelching the Tunguska-associated pseudoscience.

McCann, Stewart J. H., and Leonard L. Stewin. "Environmental Threat and Parapsychological Contributions to the Psychological Literature." *Journal of Social Psychology,* 122:227-235, 1984. Tests authors' hypothesis that the annual percentage of parapsychological contributions to the psychological literature (a) is correlated positively with the unemployment rate, (b) is correlated negatively with disposable per capita income in constant dollars, and (c) is correlated positively with the subjective "annual threat weightings" of historians and social critics. The analysis covered the period 1929-1975. The hypothesis was supported.

Morrison, Don. "B.A.S. Sees Uri Geller." *BASIS* (Bay Area Skeptics Information Sheet, Box 2384, Martinez, CA 94553), August 1984, pp. 1-4. Blow-by-blow report on what took place at a performance in June by Uri Geller in San Francisco. The Bay Area Skeptics earlier had sponsored a program demonstrating how Geller operates so that attendees would know what to look for. He didn't disappoint them. (Example: They could easily see him bending a spoon with his hands.) This is a fascinating report filled with explanations of how Geller does his tricks.

"The (Retouched) Loch Ness Monster." *Discover* (Skeptical Eye), September 1984, p. 6. In 1975, Robert Rines released a "computer-enhanced" photograph of what was then described as a "flipper-like appendage protruding from the side of a robust body." This photograph appeared in science publications all over the world and was considered intriguing photographic evidence that a large undiscovered animal might well exist in Loch Ness. It turns out that the computer-enhanced photo given to Rines by Alan Gillespie of the Jet Propulsion Laboratory, who had done the enhancement, differs considerably from the picture as released by Rines. The actual computer-enhanced photo shows only grainy light and dark spots. The photo that was released was of a lifelike apparent flipper. *Discover* quotes Gillespie: "The published pictures look a little suspicious around the margins." And it quotes Charles Wyckoff, Rines's chief photographic specialist on later Loch Ness expeditions: "After JPL finished with the photographs, they were retouched. Rines is the only one who could know how much they were retouched or who retouched them." This damning discrepancy was discovered in an investigation by Rochester, N.Y., electrical engineers Rikki Razdan and Alan Kielar. An article by them on their reevaluations appears in this issue of SKEPTICAL INQUIRER.

Rogo, D. Scott. "Fudging the Data." *Fate,* September 1984, pp. 111-112. Although the author and this publication are usually quite pro-paranormal, Rogo here, in response to a letter, provides persuasive evidence and testimony that J. B. Rhine was much less open in revealing the Levy fraud in his laboratory than previous reports have indicated. Rogo reveals that Rhine failed to listen to colleagues' suspicions that something was amiss and that

later, when the fraud was apparent, made a series of attempts to keep it from becoming known. Two others personally involved support Rogo's changes in letters to *Fate,* pp. 113-116.

"Secret Science." *Nature,* 310:352, Aug. 2, 1984. Editorial criticizes naiveté of reported pro-psychic interest inside U.S. government, a situation possible only because secrecy shields such thinking from peer review and criticism.

" 'Steve Terbot' Fools Millions, Exposes Psychic Tricks." *BASIS* (Bay Area Skeptics Information Sheet, Box 2384, Martinez, CA 94553), July 1984, pp. 1-2. Recounts the extraordinary case of Bay Area Skeptics chairman-magician Bob Steiner's whirlwind tour of Australia posing as a psychic to enormous publicity and public acceptance only to reveal on national television that he had been doing standard "psychic" magic tricks. The unmasking made front-page news all over the country. Reactions ranged from stunned silence to mixtures of relief and anxiety, depending on who had been fooled.

—*Kendrick Frazier*

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EDITOR'S NOTE: The total paid circulation for the Fall 1984 SKEPTICAL INQUIRER, counted on October 31, 1984, was 18,206.

From Our Readers

The letters column is a forum for views on matters raised in previous issues. Letters should be as brief as possible. They should be typed and preferably double-spaced. Letters are subject to editing for space and clarity. Not all of those submitted can be published. Address letters to: Editor, SKEPTICAL INQUIRER, *3025 Palo Alto Dr. N.E., Albuquerque, NM 87111.*

Psychiatry and UFO themes

I was surprised to read in Armando Simón's "Psychology and UFOs" (*SI*, Summer 1984) that the psychiatric literature contains almost no reports of UFO themes in the narratives of psychiatric patients. As a psychiatrist who has worked in a number of different settings (including a state mental hospital) with the more severely disturbed patients, I am so familiar with the "flying saucer" presentation of acute psychosis as to be nearly inured to it. Psychotic individuals, for whom the boundaries between inner and outer reality are often nonexistent, tend to clutch at the imagery of popular culture and weave it into their personal fantasy structure. Thus we see patients who are pursued by the Mafia, who are nuclear physicists working in top-secret defense projects, who have founded a new cult with offices in Guyana, and so on. Television, popular music, publicized crimes, unusual religions, science fiction, the nuclear arms race—whatever has that special ring to it—psychotic people may use in their desperate attempt to impose order on a fragmenting world.

Once I saw a lonely woman who lived by herself in a big house, her husband having left her, her children grown up and gone. She had slipped inexorably into a deep depression, and at last began to perceive that "little aliens on spaceships" were floating outside her bathroom window, spying on her when she took her clothes off. She was terrified and called police, who brought her to the hospital. Later, after she had recovered from the episode, she said she didn't believe in the spaceships any more, but was reluctant to tell me more about them for fear that, in her words, "I might believe in them again some day, and then they would have power over me and take me away to their planet."

I do not mean to detract in any way from the seriousness of the many sane individuals who relate similar experiences. A person's story is just that: a story. Whoever listens must formulate their own hypothesis about the objective reality and the subjective meaning of the events described. It is in the nature of my work to meet many individuals whose disconnected style of thought and faulty sense of personal integrity lead them to project their hopes and fears upon the world. They see UFOs, they hear celestial voices, they make themselves into undercover agents. Tomorrow's headlines are the raw material for tomorrow's psychotic delusions. If the patients surveyed in the cited study hadn't seen any UFOs,

I can only suspect that they hadn't heard about them.

Julie Johnson Knox, M.D.
Carrboro, N.C.

Justifying beliefs

People tend to believe what they want to believe. There's no way to claim this as a new discovery; it's been commented upon throughout the ages. If people believe in ESP or flying saucers, it's simply because they find it rewarding to do so. (The rewards vary according to the individual, but may include the excitement such beliefs can add to drab lives, plus perhaps the hope of somehow cashing in on the "knowledge.") And if people rationalize in defense of such beliefs rather than discarding them when they are challenged or when they fail, it's for the same reason: for the sake of a reward. The reward in the latter case is the retention of self-esteem.

The tendency to use reason to justify belief instead of to guide belief is so widespread that none of us is immune. Certainly I am not. As mentioned in your Summer 1984 issue, which deals extensively with the psychology of belief, such eminent men as Freud and Lodge were not. And even the enlightened readers of this particular publication are not. Any who consider themselves exceptions might consider certain examples of behavior that are less subjected to intellectual scrutiny. For instance, when you go out in an automobile, do you fasten your seatbelt? Nine out of ten Americans do not. Ah, but the pattern of a conceptual basis for behavior is there. When you question one of the nonfasteners, my, how the rationalizations flow. Like, "I'd rather be thrown clear than crushed." (How many times one hears *that* one!) Or, "Those straps interfere with my driving."

One can visualize behavioral researchers spending their working days contriving terms like *perceptual set* and *cognitive dissonance* to explain what they see as irrational behavior on the part of others—and then going out to their vehicles and deliberately multiplying their own chances of injury or death on the way home.

The human psyche, like the human soma, is pretty much the same as it always has been. Its exploration must be intensive, not extensive like that of the cosmos. Yet, in their zeal to be pioneers, some psychologists, just like the parapsychologists, keep on staking out supposed new territory on cloudland.

Warner Clements
Beverly Hills, Calif.

Aim to educate, not to reduce belief

I thoroughly enjoyed the Spring 1984 issue of *SI*. However, it was marred for me by the study reported by Thomas Gray. He implied throughout that his course was intended to discourage belief in psychic phenomena rather than to educate his students. He then set out to measure that change in belief. He himself conducted most of the surveys, but even those conducted by a research assistant were presumably known by the students to be related to this course. It is therefore no great surprise that the changes found should be in accordance with his stated aim.

The questionnaire itself also leaves much to be desired and even includes such an elementary error as the inclusion of psychokinesis under the term extrasensory perception. It seems a little presumptuous for someone who appears not even to know the definition of the most basic terms in parapsychology to be setting out to dissuade people from their beliefs in its phenomena.

I would hope that most courses on the pararnomal taught by skeptics aim to educate the students, to give them better tools for assessing claims and a more critical attitude, but not neces-

sarily to "attempt to bring about reductions in belief in the paranormal." If reductions in belief were found after such courses, and by independent surveys not perceived as related to the course, then that would indeed be interesting. But I fear that Gray's study only shows that his students tend to conform to their teacher's wishes.

Sue Blackmore
Brain and Perception Laboratory
University of Bristol
England

Dr. Gray replies:

I have been slaving away for a few years trying modestly and conscientiously to improve students'—and an even more general audience's—abilities to appreciate the usefulness of a scientific approach to understanding. I was therefore annoyed to read Dr. Blackmore's letter. I do not deserve her mean-toned comments.

I have no wish to further blight her enjoyment of life, but I would like to point out where she is clearly wrong and also where she might have been less impetuous and ungenerous. My attitude toward educating should have been clear to anyone who had time to do more than glance through the article. How could she miss the following description of what I try to do in the course: "The lectures dealt with basic, practical issues in methodology with particular emphasis on how to collect 'good' versus 'bad' evidence. Many paranormal topics were dealt with to exemplify the characteristics of reliable versus untrustworthy evidence" (p. 247).

In other words I was trying to give a general education in basic scientific thinking and methodology. I also debunked some "normal" science. I do not apologize for also specifically trying to disabuse students of certain unsubstantiated beliefs.

It was not an "elementary error" that led me to group telepathy, clairvoyance, and PK together under the label ESP. Most people think of that triad as constituting ESP abilities, I therefore used it as a convenience.

I do not have space to deal at length with her comments concerning the demand characteristics of the survey situation. I must point out, however, that various planned differences in the protocol over the three separate studies were aimed at dealing to some extent with such problems. For example, although respondents were anonymous in one year, and a different researcher collected the data in another, the same pattern of responding was found over three years. Recall also that the followup studies (on the phone) took place after a full year. I don't think it is plausible that a "please-the-prof-effect" was operating strongly.

Dowsing-challenge flaws

James Randi's "Great $110,000 Dowsing Challenge" (Summer 1984) suffers from a few flaws.

First, the statement that the chances of guessing "at least 80 percent, or 16 out of 20 correct" trials are "about one in a thousand" is wrong. The actual probability is 0.00591, or 1/169. This seems a rather large chance to take with $110,000, especially when the chances of guessing 80 percent or more of the trials correctly can be cut to much smaller levels by a modest increase in the number of trials. For example, 30 trials gives 1/1398, 40 gives 1/10979, and 50 gives 1/83818.

However, there seems to be a more serious problem with the type of test protocol described: Cheating by the claimant does not in itself disqualify her/him. Instead, the onus is placed on the test supervisor(s) to devise "on the spot" a suitable control. This seems rather unfair, since a dishonest claimant may have spent months or even years devising a modus operandi for cheating.

Finally, the design of the apparatus described in the article seems almost tailor-made for allowing cheating. Even if the shorting switch *had* been adequate and the oscillator *both* silent and fast (assuming the 50/50 on/off fraction to have been verified), several possible ways to cheat with this apparatus would still have existed. For example, the magnetic field caused by current flow in the resistor could have been sensed by a detector in the "pendulum." Alternatively, hidden timing equipment might have been used to keep track of the on/off state of the box for some hours after being initially synchronized to it (before the tests started).

Jonathan Thornburg
Thetis Island
British Columbia
Canada

Therapeutic touch

I am undertaking a critical evaluation of "Therapeutic Touch," a relatively recent development in the health field. Widely promulgated by Dolores Krieger, Ph.D., R.N., Therapeutic Touch is essentially the occult practice of "aura cleansing" in modern dress. I would like to ask readers of the SKEPTICAL INQUIRER who are aware of any controlled research on the subject to forward references or copies of the research to me at #4, 1737 Pandosy Street, Kelowna, British Columbia, Canada V1Y 1R2. I wish to thank any responders in advance for their assistance.

Gary W. Lea, Psy.D.
Kelowna, B.C.
Canada

Phillips's 'Straight Spoon'

I was recently studying your Fall 1983 issue, seeking information for a forthcoming report of mine entitled "Science versus Showmanship: The Case of the Randi Hoax." (This will describe James Randi's "Project Alpha," from the standpoint of the lab that was the principal target of this hoax.)

I happened to notice the news item "Uri Awards: A Straight Spoon Joins Three Bent Ones in '83." Now "joins" *might* imply to an unwary reader that this was the first occasion that a Straight Spoon Award had been presented. This would be an incorrect deduction, since several such awards were made in previous years.

A 1982 recipient of one of these awards appeared both in the nominations and in *Omni* magazine's news release announcing the awards on April 1. For some reason, however, his name did not actually reach print in the May issue of *Omni* or, for that matter, in the Fall 1982 *SI*. The recipient I am referring to is Professor Peter Phillips, Director of McDonnell Laboratory for Psychical Research, at Washington University in St. Louis.

Professor Phillips had in fact received from Mr. Randi a letter, dated March 10, 1982, dealing in part with that year's forthcoming Uri Awards. The relevant passage reads: "My Third Annual Uri Awards are coming up for presentation April 1st on behalf of *Omni* magazine, and I have mentioned your name—in a very kind and rather complimentary manner—in the award speech. . . . [Y]ou are to be presented with a Straight Spoon Award for your cautious approach to your work, recently evidenced."

This piece of information should serve to reinforce for *SI* readers the laudatory comments made by Mr. Randi (*SI*, Fall 1983, pp. 36-37) regarding the MacLab's formal (i.e., nonexploratory) phase of research.

It is curious, however, that in the *Omni* news release (unlike in the nominations, earlier) Dr. Phillips was not mentioned by name, but only as a "researcher at Washington University." Perhaps space limitations accounted for the parapsychologist's progressive

dematerialization!

Professor Phillips felt honored to have been presented a Straight Spoon. However, just as his award has failed thus far to receive any publicity, he has likewise failed to receive any tangible trophy depicting the Straight Spoon itself.

Michael A. Thalbourne
McDonnell Laboratory
for Psychical Research
Washington University
St. Louis, Mo.

James Randi responds:

The lawyers and editors of Omni *understandably had complete control of any statement submitted by me to be issued or published by that periodical. Though my original submission to them did include the name of Dr. Phillips, they chose for their own reasons to omit it. I myself even considered doing so, rather than subjecting Dr. Phillips to the judgment of an "unwary" reader who might be led to believe that Phillips had received my award as a result of having graduated from a position of total incompetence to one of common sense.*

Since my Uri awards are sent by means of "apport" powers to those honored, any failure to receive either a bent- or a straight-spoon trophy can be ascribed to psi-missing.

Encounter in Pittsburgh

I recently witnessed the special guest appearance of James Randi here in Pittsburgh at the Westinghouse Research Center. Surely there is no more knowledgeable expert on the paranormal, with or without the talent to entertain, which Randi has to a delightful degree.

Amidst the standing-room-only audience of distinguished scientists was Professor R. A. McConnell of the University of Pittsburgh, who literally took over the proceedings during the question-and-answer period by walking forward to the lectern. The ten minutes that followed showed one of the most amazing verbal collections of "whim wham" I have ever witnessed. He charged that Randi had misrepresented parapsychology, that as an entertainer he was way out of line, and that CSICOP Fellows are dishonest.

After exhibiting what I thought to be a supernormal amount of patience and courtesy, Randi calmly asked, "McConnell, can you point out one thing I have said today that is not true?" Instead of a reply, McConnell proceeded to pass out flyers advertising his own books! Randi fairly repeated the question and got the same result. McConnell revealed himself to be ill prepared to oppose the Master Magician.

Richard Busch, Chairman
Paranormal Investigating
Committee of Pittsburgh
Pittsburgh, Pa.

More on NOVA Controversy

We want to share our concern about the NOVA television program "The Case of ESP" (*SI*, Summer 1984). When we became aware of this upcoming NOVA program we were enthusiastic about the possibility of conducting an investigation of the effects of a controlled exposure to the contents of this program on the ESP beliefs of viewers. We were considering obtaining a copy of the program, classifying the various segments as either pro-ESP or con-ESP, and then preparing two new videotapes—one pro-ESP, the other con-ESP. We wanted to find out what the effects of exposure to a pro-ESP vs. con-ESP program would be on dogmatic and nondogmatic believers in ESP.

Based upon previous experiences with NOVA programs on controversial

topics, we expected a balanced presentation that would be amenable to our proposed manipulation. Our enthusiasm was short-lived. Much to our surprise, there was so little con-ESP content on the program that the preparation of a satisfactory con-ESP program was impossible. Further, the con-ESP content that was presented primarily involved criticism of specific pro-ESP studies. Therefore, it lacked comprehensiveness needed to accurately represent the con-ESP position. We hope that future NOVA programs on the paranormal will assume coverage that more accurately reflects the current status of theory and research in this area, as NOVA's previous programs generally have done. Such a more balanced presentation would certainly be fairer to the viewing public.

Jerome J. Tobacyk
Assoc. Prof. Psychology,
Thomas Mitchell
Asst. Prof. Psychology
Louisiana Tech University
Ruston, La.

Delight and dismay

When I received my first copy of SKEPTICAL INQUIRER two years ago, my feelings were a mixture of delight and dismay: delight at finding a group interested in taking the cautious, skeptical approach in viewing reports of paranormal and other pseudoscientific phenomena; dismay at the tone of voice in which some of the articles were written.

In discussing paranormal beliefs with some of my acquaintances, it does me little good to refer them to an article in *SI* in which an author with whom they are unfamiliar ridicules one of their beliefs, claiming that "as any fool can plainly see, etc., etc." Such a style of writing only serves to antagonize the believer, causing him to reject any cogent parts of the argument out of hand.

I do not confuse derision with humor. Some of *SI's* best contributors and editors have delightful senses of humor. James Randi and Martin Gardner come instantly to mind. But humor is not necessarily a put-down; derision always is.

My plea to *SI* authors is this: You are presenting an argument. Present it objectively and scientifically. Give the data you have. If you need others' findings to back your argument, synopsize them and give credit. Spread the findings around; do not just refer to them as an item in your bibliography. *Never* resort to derision; it will certainly negate the impact of your argument on those whom you should wish to convince. Those who might laugh with you probably don't need convincing and probably can find much funnier material elsewhere.

Jerome E. Smith
Chatsworth, Calif.

On debunking and objectivity

I admire the pains CSICOP takes to expose charlatans and debunk the sloppy work of some paranormalists. However, to claim you're objective at the same time you're leading a crusade to remove parapsychology, occultism, and creationism from our schools seems as though you are trying to have your cake and eat it too.

Take Martin Gardner's review of Shirley MacLaine's *Out on a Limb* (Spring 1984). (I'll pick on Gardner because he may be too busy to write one of those bristling answers full of defensive bluster that usually follows any criticism of one of your articles.)

Gardner devotes just one sentence to the scientific refutation of reincarnation (the shakiness of hypnotic recollection of past lives), reserving the brunt of his attack for the doctrine's "negative aspects"; i.e., it suggests that suffering is punishment for sins in previous lives. How scientific is it to reject a system of

thought just because you don't like its implications? Does Gardner disbelieve in heredity because it favors some people over others? How about birth defects?

Gardner also finds the popularity of reincarnation in Western thinking "astonishing." As he notes, educated Easterners are abandoning this belief. It's hardly astonishing that, as East and West become more familiar with each other, some people in each culture abandon ancient religious beliefs that no longer serve them for others that are fresh and new—even if they're old and stale in their birthplaces.

This is a minor point, but Gardner's choice of words reflects an attitude that I don't think can be labeled objective. His ending, in which he merely quotes one of MacLaine's friends who doesn't agree with her thinking, fails any standard of scientific persuasion. The friend has no more scientific or philosophical credentials than she does.

A few years ago I spent some time with Kevin Ryerson, the "channel" through which former Irish pickpocket Tom McPherson speaks. I found "McPherson" one of the wisest entities I've ever had the pleasure of listening to, and Ryerson's three other souls were not far behind. Ryerson tapes his channelings, and his own conversation is rich with quotes from his entities, making him almost as fascinating as they are.

I don't believe for a minute in Ryerson's explanation for what's going on. I suspect, however, that Ryerson does believe it; and I suspect furthermore that, if he didn't, McPherson et al. would cease their discourse.

Ryerson is not alone in producing material of value and attributing it to sources of dubious reality. The Seth books of Jane Roberts offer better guidance and inspiration than most psychology and religious primers. Many artists and musicians attribute work to outside forces working through them.

On the other hand, there are a lot of UFO contactees, "channels," etc., around spouting nonsense. And I share your concern for what seems to be a cultural trend away from critical reasoning faculties toward a fairy-tale mentality. A softer tone might better serve our ends.

Don Strachan
Los Angeles, Calif.

Tracking poltergeists

Poltergeists shatter the solitude of my small house with startling noises as they slam cabinet doors, knock over stacks of loose papers, and rap the walls and ceilings. I have tracked down the culprit after each noise and now I know the poltergeists by name—Vibration, Draft, and Material Fatigue.

However, I was baffled a long time by a full-throated moan I began to hear in the house late at night after I had turned off the air conditioner and gone to bed. It was a resonant sound, like an animal cry, but its timbre was too metallic for it to be an animal.

Late one night I visited a spare bedroom in which I stored tools and heard the moan right beside me, coming from an aluminum stepladder that I had leaned against an expanse of wall board, which made an excellent sounding board. Pent-up heat energy demanded release, causing the ladder's top edge to act like a bow on a violin string.

I had discovered the poltergeists Thermal Twins—Contraction and Expansion.

Edwin A. Rogers
Alexandria, Va.

Three on a match

The so-called superstition about "three on a match" (*SI*, Summer 1984) has a solid basis in historical fact. The wooden matches of World War I days—known as "lucifers"—burned long enough to light three cigarettes. However, as the British and French learned

the hard way, three men on the front lines who bunched together that long would draw German sniper fire. By the time the Yanks arrived—and my dad was with the AEF—the troops were warned against trying to light three cigarettes on one match.

I suspect that soldiers are still warned that "three on a match"—or any other reason for bunching up—can, in combat, attract enemy fire. We were so warned in Korea; it seems likely similar warnings were given in Vietnam. So what may now be seen as a civilian superstition does have both an origin and an ongoing life in military combat behavior.

I wonder how many other so-called superstitions also had practical beginnings?

George W. Earley
Bloomfield, Conn.

South Shore Skeptics

This is to announce the existence of the South Shore Skeptics of northern Ohio.

Our first public meeting was held on June 22. In addition to a discussion of our purpose, Dr. Nick Sanduleak of the Astronomy Department of Case Western Reserve University, one of our founders, gave a lecture on the Lunar Effect. We were able to attract a good crowd of supporters and have begun to make our presence known.

In the future we intend to continue our lecture series, start a newsletter dealing with local problems, begin a speakers bureau, and provide the region with alternative views on paranormal matters.

In order to do these things we will need all the help we can get from persons who think that our local astrologers, psychics, creationists, et al., have had too long a run without organized opposition.

If you are interested in helping in this fight, please contact us at the following address: The South Shore Skeptics, 1346 W. 64th Street, Cleveland, Ohio 44102.

Page Stephens
Cleveland, Ohio

Telepathy and the Ladies' Home Journal

I was horrified to read in the August 1984 *Ladies' Home Journal* that my company's SQUID (superconducting quantum interference device) is being used by my friend Dr. Lloyd Kaufman and his colleagues at New York University to prove *telepathy*! In an article called "Hidden Powers," under the heading "Telepathy," the fact that the SQUID makes possible detecting brain magnetic fields outside the skull and without scalp contact (a coil pickup is used) is linked to Karen Gravelle's statement "What if there are people who can actually see this energy field? There may be people who can 'read' other people's mental state from this information, and these would be the people we consider psychics."

This kind of thinking may be related to the movie *Brainstorm . . . The Ultimate Experience* wherein our liquid-helium-cooled *type* of device is interestingly carried through by science fiction to the social conclusion that thoughts and experiences recorded *a la VHS*, including roller coasters, sex, and even going with winged angels to heaven after death, would be swallowed up by the government (along with UFOs, etc.) and turned to evil purposes. Hollywood loves to remake *Donovan's Brain* and *Frankenstein* with *Hangar 18* or the *Devil's Triangle* overtones.

As manager of electronics engineering here at S.H.E. Corp. on the Neuromagnetometer for NYU's order, it naturally crossed my mind that, if all the brain's messages funneled through one nerve branch, the resultant magnetic field would be nicely modulated for pickup by our coils and SQUID amplifier—probably the most sensitive

today—and run to a Hi-Fi. We could all sit back and listen in on someone's thoughts? Fortunately or unfortunately, depending on whom you ask, the brain is not that cooperative. While it is true that we can record the human heartbeat field, "buh bump, buh bump . . ." is not as interesting to laymen to listen to. The human brain has proved quite CIA-proof compared with wired telephones, computers, and so on.

Don Watts
Manager, E.E. Dept.
S.H.E. Corporation
San Diego, Calif.

Every shroud has a silver lining

If it were possible to obtain strong evidence that the shroud of Turin is entirely genuine, then a surprising conclusion would emerge. For the most likely naturalistic explanation seems to be that a chemical photographic effect had occurred because of the contact of the shroud with Christ's body over an extended period. This would provide evidence against the Resurrection. Did the shroud have a silver lining?

I. J. Good
Blacksburg, Va.

Local Organizations

(groups with aims similar to CSICOP's)

Arizona: Tucson Skeptical Society (TUSKS), Ken Morse, 2508 E. 23rd St., Tucson, AZ 85713.

California: Bay Area Skeptics, Robert A. Steiner, Chairman, Box 659, El Cerrito, CA 94530.

Colorado: Colorado Organization for a Rational Alternative to Pseudoscience (CO-RAP), Béla Scheiber, Director, P.O. Box 7277, Boulder, CO 80306.

Minnesota: Minnesota Skeptics, Robert W. McCoy, 549 Turnpike Rd., Golden Valley, MN 55416.

New York: The New York Committee for Skeptical Inquiry, Andrew Skolnick, 60 West 83rd St., New York, NY 10024.

Northwest Skeptics, Michael R. Dennett, Chairman, Washington Coordinator, 4927 S.W. 324th Place, Federal Way, WA 98003; John Merrell, Oregon-Idaho Coordinator, 4885 S.W. 152nd Ave., Beaverton, OR 97007.

Ohio: South Shore Skeptics, Page Stephens, 1346 W. 64th St., Cleveland, OH 44102.

Pennsylvania: Paranormal Investigating Committee of Pittsburgh (PICP), Richard Busch, Chairman, 5841 Morrowfield Ave., #302, Pittsburgh, PA 15217.

Texas: Austin Society to Oppose Pseudoscience (A-STOP), W. Rory Coker, President, P.O. Box 3446, Austin, TX 78764. Dallas Society to Oppose Pseudoscience (D-STOP), James P. Smith, Science Div. of Brookhaven College, Dallas, TX 75234. Houston Society to Oppose Pseudoscience (H-STOP), Steven D. Schafersman, Chairman, P.O. Box 541314, Houston, TX 77254.

The Committee for the Scientific Investigation of Claims of the Paranormal

Paul Kurtz, Chairman

Scientific and Technical Consultants

William Sims Bainbridge, professor of sociology, University of Washington, Seattle. **Gary Bauslaugh,** dean of technical and academic education and professor of chemistry, Malaspina College, Nanaimo, British Columbia, Canada. **Richard E. Berendzen,** professor of astronomy, president, American University, Washington, D.C. **Barry L. Beyerstein,** professor of psychology, Simon Fraser University, Burnaby, British Columbia, Canada. **Richard Busch,** musician and magician, Philadelphia, Pa. **Charles J. Cazeau,** associate professor of geological sciences, SUNY, Buffalo. **John R. Cole,** anthropologist, Institute for the Study of Human Issues. **J. Dath,** professor of engineering, Ecole Royale Militaire, Brussels, Belgium. **Sid Deutsch,** professor of bioengineering, Rutgers Medical School. **J. Dommanget,** astronomer, Royale Observatory, Brussels, Belgium. **Natham J. Duker,** assistant professor of pathology, Temple University. **Andrew Fraknoi,** astronomer; executive officer, Astronomical Society of the Pacific; editor of *Mercury*. **Frederic A. Friedel,** philosopher, Hamburg, West Germany. **Robert E. Funk,** anthropologist, New York State Museum & Science Service. **Laurie Godfrey,** anthropologist, University of Massachusetts. **Donald Goldsmith,** astronomer; president, Interstellar Media. **Henry Gordon,** magician, broadcaster, Toronto. **Norman Guttman,** professor of psychology, Duke University. **Clyde F. Herreid,** professor of biology, SUNY, Buffalo. **I. W. Kelly,** professor of psychology, University of Saskatchewan. **Richard H. Lange,** chief of nuclear medicine, Ellis Hospital, Schenectady, New York. **Gerald A. Larue,** professor of biblical history and archaeology, University of So. California. **David Marks,** professor of psychology, University of Otago, Dunedin, New Zealand. **Joel A. Moskowitz,** director of medical psychiatry, Calabasas Mental Health Services, Los Angeles. **Joe Nickell,** technical writing instructor, University of Kentucky. **Robert B. Painter,** professor of microbiology, School of Medicine, University of California. **John W. Patterson,** professor of materials science and engineering, Iowa State University. **Steven Pinker,** assistant professor of psychology, MIT. **James Pomerantz,** assistant professor of psychology, SUNY, Buffalo. **Daisie Radner,** professor of philosophy, SUNY, Buffalo. **Michael Radner,** professor of philosophy, McMaster University, Hamilton, Ontario, Canada. **Robert H. Romer,** professor of physics, Amherst College. **Milton A. Rothman,** professor of physics, Trenton State College. **Karl Sabbagh,** journalist, Richmond, Surrey, England. **Robert J. Samp,** assistant professor of education and medicine, University of Wisconsin-Madison. **Stuart D. Scott, Jr.,** associate professor of anthropology, SUNY, Buffalo. **Erwin M. Segal,** professor of psychology, SUNY, Buffalo. **Elie A. Shneour,** biochemist; president, Biosystems Assoc., Ltd., La Jolla, California. **Steven N. Shore,** astronomer, Space Telescope Science Institute, Baltimore. **Barry Singer,** psychologist, Seal Beach, Calif. **Douglas Stalker,** associate professor of philosophy, University of Delaware. **Gordon Stein,** physiologist, author; editor of the *American Rationalist*. **Robert Steiner,** magician, El Cerrito, California. **Waclaw Szybalski,** professor, McArdle Laboratory, University of Wisconsin-Madison. **Ernest H. Taves,** psychoanalyst, Cambridge, Massachusetts.

Subcommittees

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Parapsychology Subcommittee: Chairman, Ray Hyman, Psychology Dept., Univ. of Oregon, Eugene, OR 97402.

UFO Subcommittee: Chairman, Philip J. Klass, 404 "N" Street S.W., Washington, D.C. 20024.

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Australia: Mark Plummer, G.P.O. Box 1555 P. Melbourne 3001; Dick Smith, P.O. Box 321, North Ryde, N.W.S. 2113. **Belgium:** J. Dommanget, Observatoire Royal de Belgique, Avenue Circulaire 3, B-1180 Brussels. **Canada:** James E. Alcock (chairman), Glendon College, York University, 2275 Bayville Ave., Toronto; Henry Gordon (media consultant), Box 505, Postal Station Z, Toronto M5N 2Z6. **Ecuador:** P. Schenkel, Casilla 6064 C.C.I., Quinot. **France:** Maurice Gross and Yves Galifret, l'Union Rationaliste, 16 Rue de l'Ecole Polytechnique, Paris 5. **Great Britain:** Michael J. Hutchinson, 10 Crescent View, Loughton, Essex. **Italy:** Cesare Baj, Newton, Pigreco S.R.I., Via Volta 35, 22100 Como. **Mexico:** Mario Mendez-Acosta, Apartado Postal 19-546, Mexico 03900, D.F. **Netherlands:** Piet Hein Hoebens, Ruimzicht 201, Amsterdam. **New Zealand:** David Marks, University of Otago, Dunedin. **Sweden:** Sven Ove Hansson, Box 185, 101 22, Stockholm 1.

The Committee for the Scientific Investigation of Claims of the Paranormal

The Committee for the Scientific Investigation of Claims of the Paranormal attempts to encourage the critical investigation of paranormal and fringe-science claims from a responsible, scientific point of view and to disseminate factual information about the results of such inquiries to the scientific community and the public. To carry out these objectives the Committee:

- Maintains a network of people interested in critically examining claims of the paranormal.
- Prepares bibliographies of published materials that carefully examine such claims.
- Encourages and commissions research by objective and impartial inquirers in areas where it is needed.
- Convenes conferences and meetings.
- Publishes articles, monographs, and books that examine claims of the paranormal.
- Does not reject claims on a priori grounds, antecedent to inquiry, but rather examines them objectively and carefully.

The Committee is a nonprofit scientific and educational organization. The SKEPTICAL INQUIRER is its official journal.